FEEDSTUFFS

The Weekly Newspaper for the Feed Industry

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AFMA Examines Industry Role in Era of Change

By GEORGE L. GATES
Editor of Feedstuffs

CHICAGO—How the feed industry can achieve the greater versatility required to serve modern animal agriculture while attempting to further perfect its basic functions was given close attention by industry executives who addressed the American Feed Manufacturers Assn. convention here May 10-11.

With evidence on hand that predictions about rapid changes in production and marketing of feed and its end products made just a few years ago are proving accurate, there appeared to be a special urgency in this year's convention-time look ahead.

"Marketing in our economy in the past few years has become all important and has overshadowed the production and processing of the products," G. A. Ensminger, executive vice president of Albers Milling Co., Los Angeles, pointed out.

"Competition for consumer preference rather than just consumer acceptance will build a stronger feed industry and a larger market for feeds than any of us thought possible 10 years ago," he said. "The future is indeed a bright one for those feed companies who plan their marketing programs with the best interests of farmers, themselves and the industry combined."

Industry's Role

Close attention to changing marketing patterns and demands of food consumers was stressed also by Dean McNeal, executive vice president of

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Feed Men Hear Suggestions on Capital and Money Management

By ROGER BERGLUND
Feedstuffs Managing Editor

CHICAGO — Changes which continue to develop in the organization and operational patterns of the feed industry and its customers have cast capital and money management in a particularly important role, requiring the soundest of credit and financial analysis, control and planning.

At the same time, much of the industry and its products are in a stage of "maturity" in the product life cycle, which makes marketing effectiveness plus manufacturing efficiency key factors for feed business success.

Management effectiveness in the 1960's was the theme of the 1960 American Feed Manufacturers Assn. convention, and two of the principal talks focused attention on (1) capital and money management and (2) production and marketing planning, efficiency and cost reduction.

A. J. O'Brien, vice president, secretary and chief finance officer of the Ralston Purina Co., provided a close look at the importance of various aspects of credit analysis and financial planning. John F. Gustafson, management consultant, analyzed the life cycle of feed products and related phases of feed company management. Other management-re-

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Seek Additive Law Changes

By GEORGE L. GATES
Editor of Feedstuffs

CHICAGO — Modifications of the Food Additives Amendment which could broadly alter the administration of the law as it affects the feed industry are being developed by the U.S. Department of Health, Education and Welfare.

Word that work is under way on these changes, proposed earlier by Arthur S. Flemming, HEW secretary, was brought to the American Feed Manufacturers Assn. convention May 10 by Ralph F. Kneeland, Jr., Bureau of Enforcement, Food and Drug Administration, Washington.

One proposed modification would affect the so-called "grandfather clause" which exempts from the definition of a food additive any substance having legal prior sanction for use.

"There is an inherent contradiction between this section of the law and the Delaney clause," Mr. Kneeland said. "It creates inequities that are without scientific basis and results in conflicts with the public health objective of the Food Additives Amendment. When there is a reasonable doubt about the safety of a drug or other substance used as an additive for food, we believe the grandfather clause should no longer apply and that the substance should have to meet the same standards of safety as apply under the Food Additives Amendment to all other substances."

Concerning another proposed

(Turn to ADDITIVE LAW, page 104)

Dean McNeal New Chairman of AFMA

CHICAGO—Dean McNeal, executive vice president and member of the board of directors of the Pillsbury Co., Minneapolis, was elected chairman of the board of directors of the American Feed Manufacturers Assn. at the 52nd annual AFMA Convention here this week. Elected vice chairman was Everett W. Turner, the Grange Co., Modesto, Cal. W. E. Glennon and W. T. Diamond were reelected executive president and secretary-treasurer, respectively.

In addition to Mr. McNeal and Mr.

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AFMA OFFICERS—Officers elected for the 1960-61 year during the 52nd annual convention of the American Feed Manufacturers Assn. were, seated, left to right, E. W. Turner, vice chairman, and Dean McNeal, chairman of the board. Also looking over the convention program are the reelected officers, W. T. Diamond, secretary (left), and W. E. Glennon, president.

AFMA ATTENDANCE HIGH; 1961 DATES SET

CHICAGO—A total of 1,882 delegates registered for the 52nd annual convention of American Feed Manufacturers Assn. this week in Chicago. This represents an increase of 80 registrants over the last previous AFMA annual meeting not accompanied by a feed show, said W. E. Glennon, AFMA president, at the close of the meeting.

He also indicated that hundreds of additional people were present in Chicago—wives and other non-registered persons—bringing the total to nearly 3,000 people who were present by reason of the AFMA convention.

Convention news was reported by a record number of 236 editors, reporters and radio and television farm directors.

Plans are now under way for the 53rd annual AFMA convention and the 7th National Feed Show which will be held May 7-10, 1961, at the Conrad Hilton Hotel in Chicago.

Pillsbury Feed Division Announces Plant, Headquarters Changes

MINNEAPOLIS—The final steps in a decentralization program for the feed division of the Pillsbury Co. were announnced this week.

Dean McNeal, executive vice president of the company and general manager of the feed division, announced that the division has appointed a single manager at each of its feed plants, with complete responsibility for sales

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Nutrena Buys Staley Formula Feed Business

Nutrena Mills, Inc., Minneapolis, and the A. E. Staley Manufacturing Co., Decatur, Ill., have jointly announced the sale of Staley's formula feed business to Nutrena, effective May 31.

According to a statement by James C. North, Nutrena president, and E. E. Rhodes, Staley soybean division manager, Nutrena will immediately begin to serve hundreds of Staley farm feed dealers and distributors in Illinois, Indiana, Michigan, Ohio, Wisconsin and Iowa.

Supplies of feed concentrates and

(Turn to NUTRENA, page 101)

FEEDSTUFFS *Features This Week*

RESEARCH—Poultry research operations of an eastern feed manufacturer are described on **page 30.**

SPECIALIZED MILL—The success of an Arkansas firm's specialized production of poultry feed is told on **page 42.**

SWINE NUTRITION—Discussing "Feed, Fat and Swine," a nutritionist comments on the most practical ways to alter carcass quality. See **page 50.**

PROMOTION—An Illinois feed man tells on **page 100** how his firm has improved its sales efforts with a weekly bulletin.

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Plant Steroids Found to Boost Livestock Growth

CHICAGO — A number of compounds in the plant steroid family have been shown to promote growth in cattle, sheep and swine.

A report presented this week at the annual research conference sponsored by Chas. Pfizer & Co., Inc., revealed that the substances "have a growth promoting effect similar to that of stilbestrol but without the recognized hormonal effect on the animals."

Also, it was noted, Pfizer scientists have found that the plant steroids boost growth in swine as well as ruminants.

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Top of the Hopper

THIS INSTALLMENT of TOTH could well be labeled the "Hilton Hopper" because the ingredients were assembled at the American Feed Manufacturers Assn. convention this week in Chicago. (A different kind of "hopper" might be implied, too, because of springing about required of delegates to keep in touch with the huge event and each other.)

Possibly heated by the news break during the convention of an important industry merger, the corridors and rooms buzzed like the 'hopper sounds of a hot July afternoon with rumors of other pending mergers.

Some feed men apparently got a kick out of starting a story to see how fast it would travel. One fellow claims he started one during the "Around the World in Ninety Minutes" social event and got the report back, after a complete circle of the ballroom, in 90 seconds.

Jokes aside, the merger talk could be considered a symptom of deep concern over industry changes and how each company and individual will ultimately fit into the new scheme of things.

TOTAL REGISTRATION of 1,882 delegates topped the registration of two years ago by 80. Last year it was higher because of the extra attraction of a feed show. A good showing, in spite of the fact that some companies sent fewer delegates than usual. AFMA has signed up many new members in the past year, and apparently interest in the convention is spreading among more of the people with whom the industry works.

IKE RIGGS' BRIEF statement on the association was to the point: "I am happy to report that your association is in excellent financial condition. I wish all our feed customers had as good a net worth. The association doesn't need money nearly so much as it needs your talents and contributions to committee work to keep it the strong, effective organization that it is."

A STRONG CURRENT of feeling that the Delaney situation as it affects organic arsenicals will be resolved before too long was evident at the convention. A special FDA committee is working on the problem and apparently progress is being made.

INDUSTRY MARKETING executives term some cooperative arrangements being made with food processors "share-the-cost" deals. Apparently there are more of these in operation than have been publicly reported. Also, opportunities to make contract arrangements with food "fabricators" (who put the final touches on convenience items as distinguished from first processors) apparently are getting more industry attention. Their need for specific quantities and qualities on a regular basis, plus their merchandising methods, makes price fluctuation less important to them and contracts with firm floors can be negotiated.

THE NEW SECRETARY of the purchasing agents committee of AFMA, Al Huggins, commented that one of the new members of the group not listed is Rep. Delaney.

ONE FEED MAN at the convention, as he sought to weigh the future role of his feed operations, was busy asking colleagues their views on what feed manufacturing returns should be in relation to capital investment, not just sales. Another person, noting more certain and pretty fair returns on other types of investments, raised a similar question. With the competitive

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How's Business?

AN EVERY WEEK REVIEW OF FORMULA FEED BUSINESS VOLUME, INCLUDING PRICE, SUPPLY AND DEMAND TRENDS

Considering that this is the time of year when the formula feed business is generally rolling full tilt, reports from across the country indicate that the long-hoped-for sales upsurge hasn't fully materialized. A number of areas of the country report that business isn't up to expectations. The index of wholesale feedstuffs price was down 1.2 points, to 74.7 this week compared with 83.7 the same week a year earlier. The feed-grain index, at 67.3, was little different from 67.2 the previous week, but was below 70.4 level of last year. This week's hog-corn ratio, based on Chicago prices, was 13.2. It was 13.3 the week before, and 12.8 the comparable week last year. (Feed markets in detail on pages 102-104.)

Northwest

The seasonal upswing in formula feed sales has continued this week; all manufacturers contacted reported a steady improvement in business except one, and he described the week as "a little disappointing."

As spring feeding gains momentum it is becoming more apparent that chick numbers in the area are down sharply, but that turkey growers are in business in a big way.

Load limits imposed in many areas because of poor road conditions continue to hamper deliveries somewhat, but are gradually being lifted as conditions improve, allowing dealers to replenish depleted stocks.

Field work is expected to get under way to a significant degree next week, and several manufacturers note that this could result in a sales slump, as farmers devote more attention to getting the crops in, and less attention to their feeding operations, as has happened in the past.

A number of ingredient prices have weakened during the week, and this will probably precipitate a feed price decline of 30@60¢ ton.

Southwest

Formula feed business took a turn for the better this week in the Southwest. Most mills were reporting five-day runs for the current week and expressing some optimism for the following week for the first time in several weeks. Some areas haven't felt much of the upswing yet but almost without exception feed manufacturers admit to an improved business compared to the last few weeks.

Some major ingredients boasted higher prices with improved demand while others, especially protein meals, continued to remain at or close to previous distressed levels. This should make formula feed prices nominally unchanged.

Starter feeds are moving in fair volume in the chick, turkey and pig lines. Volume in this line still leaves much to be desired, however. There were again indications that the improved turkey starter business would provide good volume of grower feed shortly. Hog feeds and laying rations were on the slow side but providing some volume.

Field work has been blamed for holding back any expansion of formula feed business and it is felt that the open weather may help bring about completion of this work and prove to be a stimulus to feed sales.

Northeast

An increase in demand for growing mashes created a better feeling in the formula feed market. The added tonnage sent running time of mills up to 40 hours for the first time in many weeks.

Sales of dairy feeds continue to hold up but egg mashes are once again the backbone of the market. There also has been an improvement in broiler feeds.

Prolonged rains—so far it has rained five days in a row in this area—have brought lush pastures. But as one spokesman said, it must be frustrating for dairy farmers to eye 8- to 10-inch grass and not be able to put their cattle out to graze.

Broiler prices edged up during the week, with a ½¢ or so rise. Eggs held steady but milk is due for a downturn.

Most ingredients were either unchanged or lower during the week.

Corn was unchanged to 1¢ lower; oats and barley held steady. Lakes' feed wheat arrived in Buffalo for unloading over the week-end and with it will come sharply lower prices.

Running time of formula feed manufacturers rose to 40 hours last week from 36 hours in the previous period.

Central States

The week ended May 11 showed but little change from either of the two preceding ones. Volume of new business did not show any betterment. Generally speaking, mixers say that May volume looks as though it will be no better than the preceding month's and is already falling a little behind the first 10 days of May, 1959.

Day-to-day business seems to be just about enough to offset the feed that is being ordered out. The backlog remains a "comfortable one" but is not nearly as heavy as most mixers would like to see it. When business picked up during March there was more or less optimism in the trade as a whole, but with April falling off and May showing no evidence of being any better than April, there has been some letdown in the prospect.

Most plants are operating on a 40-hr. week with occasional exceptions. A very few are running a little overtime and a corresponding few are not quite reaching the five-day standard week.

Pacific Northwest

This week's formula feed sales continued at a fair volume pace despite the fact that improved weather conditions resulted in small cut-backs in dairy feed sales throughout Oregon, Washington and Idaho. However, mixers reported a good movement of poultry feeds.

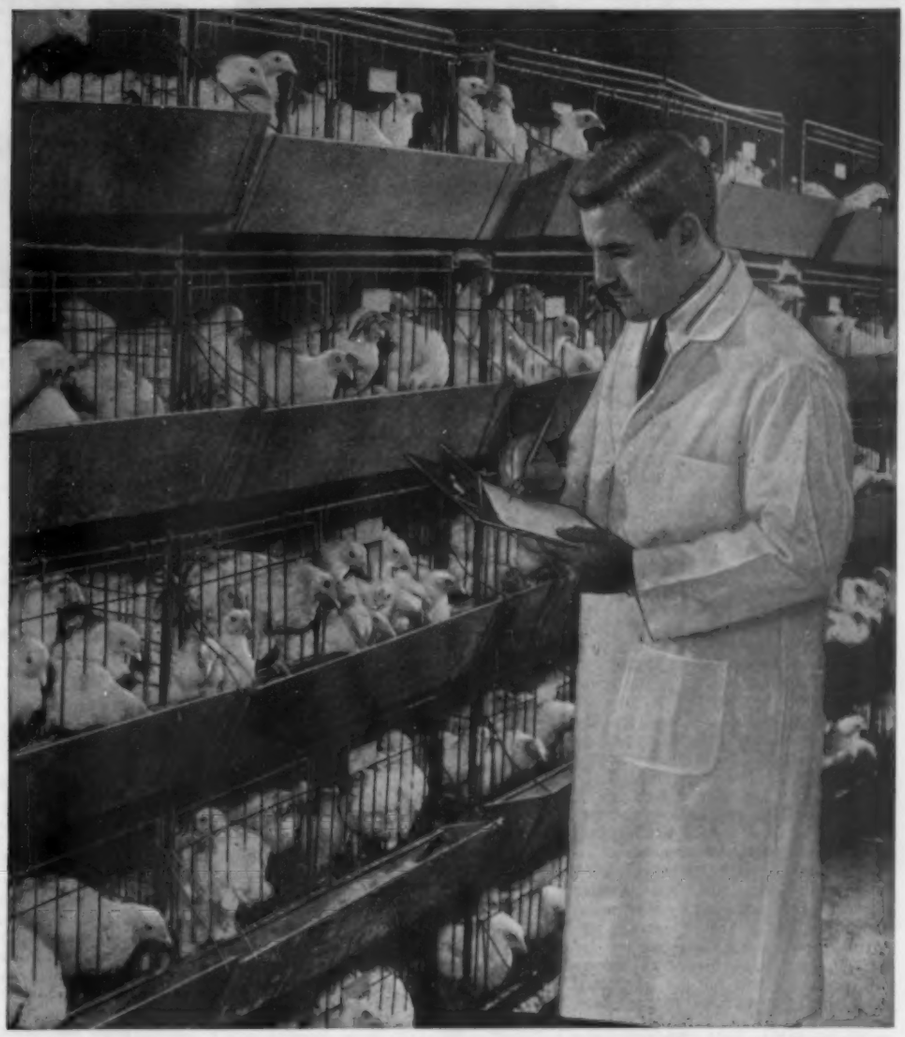
Pacific Northwest feedstuffs listings ruled barely unchanged to easier with trading generally considered to be on the moderate side. Quotations averaged a shade lower at most quarters where offerings of principal items appeared adequate. The general demand was confined mostly to immediate and prompt shipment supplies. Buyers, however, were not inclined to anticipate forward requirements.

Soybean meal values closed 50¢ a ton lower under ample offerings, and other oil seed meals were unchanged for the trading period. Animal pro-

(Turn to MARKETS, page 107)

Peter Hand

DOWN ON THE FARM



To help you produce better feeds, Peter Hand Research Farm conducts thousands of feeding experiments on poultry, swine and cattle. Latest scientific developments —vitamins, antibiotics and additives—are evaluated.

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INDUSTRY ROLE

(Continued from page 1)

the Pillsbury Co. and new chairman of the AFMA. His sum-up took direct aim at answering the question: What can feed men do for the producer to enable us to share in his expanding market?

First, said Mr. McNeal, the industry can face up to the fact that competition between foods for a bigger share of the consumer dollar will become more severe rather than less.

"In considering this fact," he said, "the feed industry must realize that it supplies the most important cost-of-production item to the feeder and plan how it can better meet the challenge of this position.

"Next, the feed industry must develop a sales force able to contact and work with these bigger specialized feeders and speak with them on even terms. These salesmen will have to be trained specialists talking to and selling feeders who are specialists.

"These feeders will be big businessmen who are experts in the production of livestock and poultry. This calls for broad changes and stepped-up activity in our sales training programs. It also calls for an aggressive program aimed at reducing the costs of producing proteins."

Mr. McNeal listed these specific points involved in the industry's challenge: Expanded research programs to find ways to put more meat, milk and eggs into a pound of feed; more efficient methods of handling and distribution of feed; better understanding of feeder demands or needs.

In relation to the latter point, he raised this question: What feeder services being provided by feed manufacturers today are of enough importance to pay for their cost?

"The specialized feeder of tomorrow probably will not be interested in paying for various management services through an increased margin on his feeds," he said. "He will want to buy these services from professionals on a basis where they can be identified and the cost measured against the results."

Arithmetic Lesson

I. S. Riggs, vice president of the Quaker Oats Co. and immediate past chairman of the AFMA, Chicago, evaluated a more specific area of today's industry economics. In discussing what he termed "the egg feed dilemma" he compared the arithmetic of producing feed for consumption by feed company-owned laying flocks with similar operations in broilers.

His conclusion: "It requires a lot more capital to 'eat up' your own production in laying feeds than it does in broiler feeds."

Here is a further summary of the facts and opinions expressed by these three top industry executives:

MR. McNEAL: Many of the changes occurring in agriculture present real and difficult challenges. Some are favorable for the feed industry, and some are quite unfavorable. Some are good for certain areas and some are bad for those same areas. Regardless of their impact, as we individually recognize these changes, study them carefully and face up to their implications we will be better able to adapt our particular situations to either take advantage of them or minimize their unfavorable effects.

The feed industry has increased its tonnage from 29.1 million tons in 1950 to 40 million tons in 1959, and production in 1970 is estimated at 55 to 65 million tons. The increase occurred during a period when feed efficiency increased sharply. It has occurred because of increased livestock numbers and because more feeders have discovered the necessity of feeding balanced rations if they are to be competitive. These two factors are expected to continue, and the projected tonnage for 1970 is based on a 4% increase per year, which seems readily attainable.

FEED MEETING SPEAKERS—Changing agriculture, marketing and food additives were the subjects of talks by these three men at the American Feed Manufacturers Assn. convention this week in Chicago. Shown in action are (left to right): Dean McNeal, executive vice president, The Pillsbury Co., Minneapolis, and newly-elected AFMA board chairman, speaking on "Our Changing Agriculture and Its Effect on the Feed Industry in the '60's"; G. A. Ensminger, executive vice president, Albers Milling Co., Los Angeles, speaking on "Marketing the End Product," and Ralph F. Kneeland, Jr., Food and Drug Administration, Washington, on "The Food Additives Situation."

Advances in mechanization, automation and other sciences have made it necessary for a farm manager to be better educated and to operate on a much bigger scale if he is to take optimum advantage of this greater "know-how."

Population Shifts

A projection of population increases by 1970 shows these differences in potential increases between different areas: North Atlantic, 127%; South Atlantic, 137%; east north central, 139%; west north central, 122%; south central, 121%; West, 157%; average, 134%.

Even sharper contrasts between the expected population growth of individual states are apparent. Nevada, for example, is expected to show a population growth of 204%, while at the other end of the scale Arkansas is expected to show a decline in 1970 to 84% of its 1955 population.

The significant differences between states point out the fallacy of taking average figures even for a region.

Important changes also are occurring in eating habits. The following table shows these changes, including a projection to 1975 expectations:

Per Capita Consumption—U.S. (Index 1925-29=100)

	1925-29 Average	1954	1975 Projected
Meat	100	122	132
Dairy products	100	108	113
Poultry	100	185	211
Eggs	100	110	109
Potatoes, sweetpotatoes, grains, dry beans and peas	100	68	63

Another trend significant to the feed industry is the tendency for more animal proteins to be produced in increasing volume close to the more congested population areas. This trend has accelerated rapidly in the past 10 to 20 years.

Farm Programs

What effect will farm programs have on animal agriculture in the future? Programs which started in the 20's and early 30's were developed with field crop agriculture in mind. As emphasis has changed to animal agriculture, demands on government relative to the type of farm programs needed also have begun to change. During the last session of Congress, representatives from basically livestock and poultry areas as well as consumers began to question high price supports for feed grains, the most important cost-of-production item for producers.

The new parity concept results in lower parity prices on feed grains relative to the old parity price than is true of most livestock and poultry products.

If both grain and livestock products were at full parity, most feeding ratios would average more favorable under the new calculation than under the old.

Big Businessmen

Feeders have rapidly become big businessmen, resulting from the changing emphasis on human labor to the use of capital and scientific methods on farms. From 1935 to 1958 productivity per man has increased more than two and a half times. There is still room for much greater efficiency and greater productivity per man in the years ahead.

Sales per farm averaged from $4,000 to $7,600 in 1954 and are expected to increase to $17,000 by 1975. Farm investments increased from $8,850 in 1940 to $34,000 in 1954, and an increase to $68,000 is expected by 1975.

Similarly, livestock production per farm showed huge gains between 1939 and 1954: Hogs and pigs up 151%, chickens up 790%, cattle 141% and turkeys 514%.

A statement by an Ohio poultry leader that there probably would be less than 5,000 laying flocks in that state in 10 years illustrates how drastic some people feel this trend could be. At present there are about 80,000 flocks in Ohio, compared with about 150,000 ten years ago.

Integration has become an important factor in American agriculture, stimulated by a necessity for reaching optimum production efficiencies and demand for more uniformity and average higher quality of products. To the extent that real efficiencies and other advantages can actually be realized through some degree of integration, we can certainly expect these combining of abilities to occur.

Pressure for Volume

As production methods have changed, production costs per unit have declined, but the competitive situation has reduced returns to the feeder and has resulted in pressure for greater volume per unit of labor and equipment. Gross returns per dollar of feed cost for eggs, broilers and turkeys have declined significantly in the past 10 years.

Producers are becoming more specialized. Between 1940 and 1954, the number of enterprises per farm decreased from five and a half to about four and a half. In the future, more feeders can be expected to specialize in one, two or not more than three enterprises rather than many.

While these rapid changes in animal agriculture will cause many upsets in our industry and in related industries, their net effect will be good for producers of animal products and those who serve them. They assure a healthy business atmosphere for those industries which are willing to both accept and initiate change. To be a participant in this game will require both courage and foresight. These are two characteristics which have brought the feed industry to its present position in the business world, so there is every reason to believe that those changes will provide the impetus to take off for new heights.

MR. ENSMINGER: Food is the end result of feed—our feed industry will prosper, in direct ratio to the aggressive marketing of the end product. Putting it another way, the marketing arrangements we endorse or sponsor for meat, milk and eggs will determine feed sales of the industry.

Experts are of the opinion that milk and eggs will withstand the terrific competitive pressure of new products to be marketed in the next 10 or 20 years. The "experts" do not imply that beef, pork, lamb, broilers or turkeys would disappear from markets, but rather that good sources of vegetable proteins could be produced cheaper. I doubt that any of us should be alarmed about the future of meat. Still, we can't overlook economics.

Recently we have been hearing more and more about specification production. This is good for the feed industry. It affords meat, milk and eggs an opportunity to gain more of the consumer dollar. An executive of one of the larger packing companies told me that demands being made of them relative to carcass size are very exacting. For example, beef carcasses must not vary more than 50 lb. He feels that specification production will eventually affect all red meat and poultry. This, then, sets into motion a chain reaction as the breeder, nutritionist, grower and processor are all involved. The door is open for us to help the farmer meet these specifications and market a better product.

Area Trends

Area trends are significant. Production will center where unit cost and distribution are lowest. Transportation cost can and will determine the premium any area can demand for meat, milk or eggs.

We should watch for the following:

- Slaughtering of finished cattle moving closer to the feeder areas.
- Egg processing centering closer to egg production; in some cases, on-the-ranch processing, depending on the flock size.
- Some shifting of broiler processing, or the movement of live birds from one state to another to capture premium markets.
- Less movement of live hogs from the Midwest to the West for slaughtering as the West builds its own pork production.
- Shortening of the marketing steps in order to get the end product to the consumer at the lowest price—elimination of some middlemen.

Marketing of meat, milk and eggs can determine plant location, an individual company's position in the industry, and the kind of people that will be associated with our industry. Certainly more of our merchandising and advertising dollar will go toward helping the farmer market his products.

There are many factors involved in marketing that can be improved upon to bring greater consumer acceptance and to get a larger percentage of the consumer dollar. These are things each company can do something about—improved breeding, nutrition, better management by growers and improved advertising and merchandising.

Albers had an interesting experience in the Northwest recently. We decided to test the value of marketing our own brand of eggs. The chain stores, processor and ourselves put on a concentrated merchandising and advertising program. Sales increased 37% during the test period. Equally important is the fact that we found that sales started to decrease when advertising and merchandising pressure was lessened. The price received was a premium of 3¢ to 5¢ doz.

A longer-range merchandising and advertising program is being set up to determine how long a trend of increased sales can be maintained.

Coordinated Integration

Integration plays a very important role in the marketing area. Of the three types, vertical, horizontal and coordinated, the latter is the type we prefer. It is the private ownership and management of the different phases of agriculture working together to produce, process and sell a uniform, high quality product at a fair price.

This price is achieved primarily by greater efficiency rather than by the elimination of steps in production as many people assume. This need for greater efficiency has been ignored by many operators with drastic results. These people blame integration for their failures when it really was their own fault for not improving their efficiency. The basic factor pushing efficiency in agri-business is competitiveness or the constant pressure to do things better. Consumers are not necessarily demanding a better product until they have been conditioned to know what a better product is, but the merchandising to point out why it's better gives the competitive advantage.

Here are some of the factors which have affected marketing in recent years:

1. Food marketing is controlled by fewer and larger firms.

2. These large retailers are in a position to demand and obtain the variety, quality, quantity and price of products they market rather than take what is forced upon them as it used to be. The hesitancy of producers and processors to supply the uniformly high quality product essential in today's markets has forced many supermarkets to integrate and produce and process their own products.

3. Retailers are dealing direct with large suppliers rather than depending on brokers to supply them with specified types and quality of products.

4. Specifications of the final product are now being more closely controlled. The consumer now recognizes these specifications and demands that they be met.

5. Competition among retailers is becoming increasingly keen, which has changed the marketing outlook and improved consumer awareness. Chain store advertising has built up consumer images such as, Market X has good meat; Market Y has good produce. These images have changed our marketing outlook substantially.

MR. RIGGS: The language of economics is a "half-forgotten language." Expressed in feed language, our profit or loss depends on our selling price multiplied by the total tons sold, minus our total costs. Let us take egg feeds as a case in point.

Egg feed business has been the backbone of the commercial feed business. Early in this century some farmers who wanted to be nice to their hens fed mill and packing house by-products, plus perhaps some green ground bone and charcoal, to their laying flocks. This was a supplement to the ration of grain, bugs, grass and hay.

In the second phase of the egg feed business, we as an industry formulated and produced a more scientifically compounded mash to supplement the grains. The chickens, the farmers and the feed manufacturers all produced better and prospered. Egg prices were good, production was not highly specialized, margins were good and everyone prospered.

In the third phase, commercial egg production became more highly specialized, the producer's profit margins were more narrow, new techniques such as pelleting were introduced and a high percentage of the laying feed business became complete feeds. This increased producer efficiency, raised feed tonnage and lowered manufacturing costs per ton—because we were selling the producer his total needs.

We are in the midst of the fourth phase currently in some surplus grain areas. In this phase the producer—or a grind and mix dealer—purchases a concentrate and makes a complete feed locally. Producer margins have shrunk, dealer margins have shrunk and manufacturers' tonnage has certainly dropped.

Influence of Change

Let us examine the influence of this change on the feed manufacturer and his volume. Assume with me that we are feeding 100,000 hens and that they consume 25 lb. per 100 per day: With the mash and grain system they ate 6¼ tons of mash per day; with the complete feed system, consumption was 12½ tons per day; with the concentrate system, we would sell four tons per day of their total requirements.

When the mash and grain system was in vogue, the small size flock was the major outlet for the dealer. The small amount of services and financing required by these operators made this business attractive to both manufacturers and dealers.

The very nature of today's larger, more specialized flocks makes the egg feed business highly competitive—in terms of credit, service and purchasing power (or volume).

The egg feed market is in the declining phase. We have fewer farmers keeping chickens; therefore, fewer customers. We have fewer hens on farms; therefore, fewer feed consuming units. We have a shift in the kind of manufactured feed used, depending on the location of your business and the availability of grain. There is also some geographic shift in the concentration of laying hens. This generally means greater competition among feed manufacturers who want to keep their mills producing to capacity in areas of declining poultry numbers.

Generally then, the egg feed business is a declining share of the total feed business because broiler, turkey, swine and cattle feed tonnages are not declining but are increasing.

One Alternative

What's the answer to this egg feed dilemma? There are several alternatives. One of these might be, as it has been for some in the case of broilers and recently in beef:

Produce for your own consumption. Take a look, with me, at this concept. A mill manufacturing 20 tons per hour with 2,000 hours of operation per year would produce 40,000 tons annually. One hundred thousand hens would consume 12 tons of complete feed per day. Making due allowance for growing feeds, this might stretch to 13 tons per day. Thus we see that it would take 1,060,000 laying hens plus their growing replacements to "eat up" the output of a 20-ton per hour mill on an eight-hour shift. This may not be an impossible situation. But it would require an investment of at least $2½ million to own those hens to "eat up" $2½ million worth of feed—an eight-hour output daily for a year.

This is a considerably different picture than trying to "eat up" the 40,000-ton output in broiler feeds. This would require 10 million broilers a year. But these 10 million broilers would require an average investment of only $500,000 in broilers to sell the same dollar volume of feed. I think there's no need for me to point out that the difference between a $500,000 investment and one of $2½ million is $2,000,000.

How many of you are in a position to own $2½ million worth of hens for each 40,000 tons of manufacturing capacity? That sort of solvency rates a round of applause.

I do not believe that contracting in egg production will follow the pattern of broiler contracting. The idea of contracting is attractive enough in the abstract, but the pattern of profits for feeder and contractor is far different in egg production from the profit pattern in broiler contracting.

There are a number of good reasons for the difference between contracting for eggs and contracting for broilers. Broiler contractors started in what I call the expansionist phase—consumption expanded, technology expanded and profits were good for many years. But look at egg production.

Egg production technology is much more highly developed than was the broiler industry in 1945. Profit per bird or per dollar invested is lower in eggs. And probably most important of all, egg consumption is inelastic (or shrinking) rather than elastic. We have been able to buy increased broiler and turkey consumption by lowering retail price, offset generally by greatly reduced costs. The results of the last 12 months indicate that it is doubtful if we can buy increased egg consumption by lowering price.

A concept that might answer the egg feed dilemma is price cutting. Already, some say there are evidences of this as a solution. No doubt this will be a permanent and painful solution to the loser and an unsure cure for the winner.

A solution—though apparently a long way off—might be this much talked about but vague thing called egg quality. At least, one of the bright spots in the egg feed business is the concern of the feed business for quality eggs, better eggs at retail as a stimulant to the consumption of more eggs. Something should certainly be accomplished, with all the interest and action in the problem.

Let's keep in our minds the language of economics. Let's never forget that management's responsibility is to make a profit and that management must stand accountable for any losses. None of us can afford to forget the simple economic formula which tells us that profit or loss is determined by three little factors—price times volume, less cost.

AFMA NUTRITION COUNCIL—Newly-elected chairman of the AFMA Nutrition Council Executive Committee, Dr. W. W. Cravens, director of feed research and nutrition for the McMillen Feed Division of Central Soya Co., Ft. Wayne, Ind., is shown here addressing the 1960-61 members during the AFMA 52nd annual convention in Chicago. Committee members shown are: (standing left to right) James Sutherland, Rooster Mills Division, Philip R. Park Co., San Pedro, Cal.; Frank Cune, Jackson Grain Co., Tampa, Fla; Thomas A. King, Illinois Farm Supply, Chicago; Ken Nold, Osborne-McMillan Elevator Co., Minneapolis, and Everett A. Blasing, Pillsbury Co., Clinton, Iowa. Seated (left to right) are: Dr. J. Wesley Nelson, Nutrena Mills, Inc., Minneapolis; Dr. Ruel E. Ward, Eastern States Farmers Exchange, West Springfield, Mass., and William T. Diamond, AFMA secretary.

Cooper Building New Feed Mill

COZAD, NEB.—The O. A. Cooper Co., feed manufacturing firm with headquarters in Humboldt, has begun construction of a new feed plant at Cozad, according to Guy L. Cooper, president.

The mill will produce a full line of feeds and will serve the Platte Valley and central Nebraska. Other Cooper plants are located at Humboldt and Beatrice, Neb.

The new mill will be a push-button type plant, with facilities for bulk ingredient handling and storage. The initial capacity will be 100 tons per eight-hour day, with provision for expansion to 200 tons through the addition of more pelleting facilities. Slip-form concrete construction is being used. Completion is expected by October.

The plant is being built by Combs & Co. of Kansas City. Joseph Genoa, secretary of the Cooper company, will be manager of the Cozad operations.

The mill facilities will include 18 40-ton bins for bulk finished feed.

Mr. Cooper also announced that his company is modernizing the Beatrice and Humboldt mills. This program includes the installation of nine 50-ton bulk feed tanks at Humboldt and two at Beatrice.

Dr. W. W. Cravens Will Head AFMA Nutrition Council

CHICAGO—Dr. W. W. Cravens, director of feed research and nutrition for McMillen Feed Mills, a division of Central Soya Co., Inc., Ft. Wayne, Ind., will head the American Feed Manufacturers Assn. Nutrition Council as chairman for the coming year.

Dr. Cravens will be assisted by Dr. J. Wesley Nelson, associate director, research nutrition at Nutrena Mills, Minneapolis, who was named vice chairman. The elections were held by the Council's executive committee during the 52nd annual AFMA convention in Chicago.

Dr. Cravens will head the association's scientific and technical program in the year ahead. He succeeds Dr. Ruel E. Ward, director of feed research, Eastern States Farmers Exchange, West Springfield, Mass., who has headed the Nutrition Council during the last 12 months.

The new chairman has established an eminent record in scientific circles. He is well qualified to direct activities of the Nutrition Council, which comprises scientists responsible for feed formulation, quality control and biological research for 72 feed manufacturers. In addition, 15 allied industry associations have scientific representation in the Council's membership.

Dr. Cravens holds membership in nine national and international scientific organizations. He holds degrees from the University of Kentucky, Iowa State University, and the University of Wisconsin. He was a member of the Wisconsin faculty from 1940 to 1953. In 1950, members of the Poultry Science Assn. selected him to receive the AFMA's $1,000 Award for the most outstanding contribution to poultry nutrition research.

Elected to the executive committee for terms of three years were: Everett A. Blasing, the Pillsbury Co., Clinton, Iowa; Thomas A. King, Illinois Farm Supply, Chicago, and James Sutherland, Rooster Mills Division of Philip R. Park, Inc., San Pedro, Cal. Elected to fill a one-year vacancy was Dr. C. D. Caskey, Cooperative Mills, Inc., Baltimore.

Three new active members were named in the same session of the committee. They are Wilfred M. Witz, supervisor of nutrition research for Archer-Daniels-Midland Co., Minneapolis; Ramon E. Fry, director of nutrition, Botkins (Ohio) Grain & Feed Co., and Henry L. Witz, director of Larro Research for General Mills, Inc., at Indianola, Iowa.

Spokesmen for 11 national agricul-

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New Animal Science Developments Explored at Pfizer Research Event

By ROGER BERGLUND
Feedstuffs Managing Editor

CHICAGO—New research developments which have brought or promise further advances in livestock and poultry performance were highlighted at the eighth annual research conference sponsored by the agricultural research and development department of Chas. Pfizer & Co., Inc.

The conference was held May 8 at the Conrad Hilton Hotel in Chicago, preceding the convention of the American Feed Manufacturers Assn.

A large audience of nutritionists and other feed men was on hand to hear talks by five speakers from agricultural colleges along with Pfizer scientists.

Following are some of the points made by speakers:

- Great advances in the efficiency of poultry production will be made in the near future through a better understanding of the mechanisms by which light influences metabolism, nutrient requirement, etc.
- Research with lysine offers a new concept in ruminant nutrition. Lysine supplementation of other types of rations also has improved results.
- Rations lower in protein but balanced in amino acids may emerge for swine. Energy values determined specifically for the pig may come into use.
- Certain methods of antibiotic potentiation have been found practicable under commercial conditions. Most widely used method is the temporary reduction of calcium level.
- Field trials indicate a profitable increase in milk production as a result of feeding Terramycin to milk cows.
- Application of germ-free animal techniques may be the greatest single animal health development of this decade.
- Feeding of oleandomycin has been shown to improve performance of steers and dairy calves as well as other livestock and poultry.
- A large amount of research is needed to account for all of the productive energy used by ruminants.
- Plant steroids have been shown to be a new type of livestock growth promotant, increasing gains in both ruminants and swine. (See story on page 1.)

Hugh Dermody, assistant general manager of Pfizer's agricultural division, cited the continued importance of efficient and abundant food production, and he noted the key role of research in this production. Certain conditions resulting from the government regulatory situation have brought some changes for industry, he noted, but the current environment caused by the government action is thought to be only temporary. Research will accelerate progress for agriculture.

Following research reviews and reports in the afternoon, the conference banquet was held, featuring an address by Sen. Karl E. Mundt. (See story on this page.)

Summaries of conference reports follow:

POULTRY NUTRITION HIGHLIGHTS—Possible application of information on the use of light in poultry production and the need for a better understanding of the action of natural inhibitors in feed ingredients were among the points brought out in a talk by Dr. James McGinnis of Washington State University.

It appears, he said, that a better understanding of the mechanisms by which light influences metabolism, physiology, nutrient requirement, etc., will make it possible to improve performance. Great advances in production efficiency in the near future were predicted.

It has been shown that an increased photoperiod is accompanied by a marked increase in feed consumption and fat deposition. Carbohydrate metabolism is apparently altered through changing photoperiods.

It is conceivable, Dr. McGinnis said, that we might be able to greatly influence the appetite of birds, particularly broilers and turkeys, through manipulation of the photoperiod.

He went on to note that light or photoperiod has an influence on nutrient requirement or feeding practice.

Dr. McGinnis said differences between two types of diets might be due to presence of inhibitory substances in some practical diets. When one tabulates a list of ingredients known to contain inhibitors, the list is impressive. It will be increasingly important, he said, to have a better understanding of the manner in which inhibitors that occur naturally influence nutritional requirements.

The Washington scientist also discussed the influence of dietary ingredients on nutrient availability—in this case minerals. Studies have shown, for example, that the type of

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RESEARCH REPORTS—Recent developments in antibiotic potentiation for poultry and in plant steroids as growth promoters in livestock were discussed by these three speakers at the recent eighth annual Pfizer Research Conference in Chicago (left to right): Warren Reynolds, manager of the Pfizer agricultural research center, Terre Haute, Ind.; Dr. Roy Luginbuhl, department of animal diseases, University of Connecticut, and Dr. K. E. Price, a bacteriologist of the Pfizer research center.

PFIZER CONFERENCE—Sen. Karl E. Mundt (R., S.D.), left, banquet speaker at the eighth annual research conference of Chas. Pfizer & Co., Inc., chats with J. Jerome Thompson, vice president of the drug firm and general manager of the company's agricultural division.

Sen. Mundt Calls For Agricultural Market Expansion

CHICAGO—The expansion of domestic and international markets and not production controls and marketing quotas will best lead to a permanent solution of the national farm problem, Sen. Karl E. Mundt declared here May 8.

Speaking at a dinner marking the close of the eighth annual agricultural research conference of Chas. Pfizer & Co., Inc., at the Conrad Hilton Hotel, the South Dakota Republican said that past production control and price support programs have failed to bring security to the American farmer.

Sen. Mundt called for a new approach, a forward-looking program which will enable industrious farmers to succeed, not just survive.

J. Jerome Thompson, vice president of Pfizer and general manager of the firm's agricultural division, in introducing the Senator, also called attention to marketing problems.

Mr. Thompson first cited the importance of agricultural research, and he noted that scientific agriculture, through continued progress, is producing enough for the U.S. and many persons in foreign countries.

"The big question," he said, "is—Can we market our vast output? If we can sell and distribute all that we produce, we will have a most im-

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Machinery Group Plans Activities

CHICAGO—Co-sponsorship of the National Feed Show in 1961 and continued support of the Feed Production School and the feed technology program at Kansas State University are among activities of the Grain Processing Machinery Manufacturers Assn. which were highlighted at the association's 10th annual meeting May 9 in Chicago. The meeting was held in connection with the annual American Feed Manufacturers Assn. convention.

It was pointed out at the meeting that the Feed Show next year will be held May 7-10 under the co-sponsorship of AFMA and GPMMA. The show will be held in conjunction with the 1961 AFMA convention at the Conrad Hilton Hotel in Chicago.

GPMMA officials also noted that the group is cooperating with the Feed Production School in Kansas City. Several of the GPMMA members are trustees of the school. Machinery firms will have consultation booths at the next school, as in 1959.

George Thomas, Prater Pulverizer Co., in reporting on the K-State feed tech program, said that the program should be effective in providing industry leaders. At present there are 77 students in the feed tech curriculum. To help support the program, the association has provided funds for a scholarship.

Officers Reelected

Reelected as officers and directors at the meeting this week were Chester N. Hultberg, California Pellet Mill Co., president; Alexis C. Barbeau, Jr., S. Howes Co., vice president, and C. Robert Myers, Myers-Sherman Co. and Ralph E. Williams, B. F. Gump Co. Also on the board are Irl A. Daffin, Daffin Mfg. Co., and Robert F. Merwin, Eriez Mfg.

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Pillsbury to Close Kansas Feed Mill

MINNEAPOLIS — The Atchison, Kansas, Pillsbury mill will terminate feed manufacturing effective May 31, according to an announcement by Dean McNeal, executive vice president.

All of Pillsbury's feed territories will remain intact in the area, but shipments will be made from two other nearby plants, said Mr. McNeal.

House Action Threatens to Give Priority To USDA Bins in Government Storage

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON — Congressional action found in the house approval of the appropriations bill this week threatens to give empty U.S. Department of Agriculture grain storage bins priority over commercial warehouses which are signed up under the Uniform Grain Storage Agreement.

This threat is contained in an amendment to the appropriations bill offered on the House floor by Rep. Sidney R. Yates (D., Ill.). The amendment, as adopted by the House, reads: "Provided further, that none of the funds herein appropriated shall be used to formulate or administer any program which does not provide for maximum use of government-owned facilities for storage of surplus commodities, consistent with the economical operation of the corporation."

The last clause of this provision was included by the House after it developed that there were valid objections raised by Democratic leaders on the floor such as House Agriculture Committee Chairman Harold Cooley (D., N.C.) and Jamie Whitten (D., Miss.), chairman of the House sub-committee on agricultural appropriations.

This last provision was later called a "watered-down" of the original wording, but, nevertheless, it failed to satisfy the more comprehensive critics of the proposal.

Among those firm critics were Congressmen Walt Horan (R., Wash.) and Robert H. Michel (R., Ill.), who not only challenged the obvious intent of the bill to give USDA bins priority over the commercial warehousemen, including cooperatives, but also cited the responsibilities of commercial warehousemen who assumed risks of maintaining the quality of grain stored surpluses. CCC did not cover such risks.

The chief proponent of the provision, Rep. Yates, insisted that the final provision of the amendment to the bill did not represent a "watering-down" of his original proposal but rather an addition of flexibility in administration. Mr. Yates concluded that because of the attitude of the USDA "it is necessary to have an

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Ed Koon Reelected AFMA Executive Traffic Unit Head

CHICAGO — Ed Koon, Spartan Grain & Mill Co., Spartanburg, S.C., was reelected chairman of the executive traffic committee of the American Feed Manufacturers Assn. this week. Reelected vice chairman was T. V. Hansen, Southern States Cooperatives, Baltimore, Md. Art Leitherer, Allied Mills, Chicago, is the secretary.

In other committee action, Dick Staley, Quaker Oats Co., chairman of the subcommittee of uniform transit tariff in Southern Freight Assn. territory, reported that a sample tariff was prepared and recommended to the SFA. The proposal would allow all feed manufacturers to oper-

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Ted Harstad Heads Purchasing Agents' AFMA Unit

CHICAGO—Ted Harstad, director of purchases for Doughboy Industries, Inc., New Richmond, Wis., will head the executive committee of the American Feed Manufacturers Assn. committee of purchasing agents for the coming year, as the result of elections here during the 52nd annual AFMA convention.

Mr. Harstad, a native of Wisconsin, was elected to the purchasing agents executive committee in 1959, after serving two years as a sub-committee member. He is a registered pharmacist and a graduate of Marquette University, Milwaukee.

Named secretary of the purchasing agents for the 1960 term was A. L. Huggins, International Milling Co., Minneapolis. Five members were named to serve on the executive committee during the coming year. They are: Clarence Merkle, Moorman Manufacturing Co., Quincy, Ill.; Edwin H. Durr, Golden Eagle Milling Co., Petaluma, Cal.; Clyde Lott, Jackson Grain Co., Tampa, Fla., and E. G. Young, Illinois Farm Supply, Chicago.

A motion expressing thanks to Fred Becker, Farm Bureau Milling Co., Hammond, Ind., and Elmer Korte, McMillen Feed Mills, Ft. Wayne, Ind., was recorded by the committee. Mr. Becker served three years as chairman. Mr. Korte is outgoing secretary.

Ample Feed Supplies Cut Immediate Effect Of Ohio Valley Drouth

By Special Correspondent

CINCINNATI — Although thick clouds obscured the sun during the past week in Ohio Valley, only an inch or so of rain fell throughout this period, and valley farmers face substantial losses unless considerably more rain falls in the immediate future — a prospect local weathermen consider very unlikely.

Up to late this week, drouth conditions have had virtually no effect on commercial feed business as farmers continue to feed surpluses still available from last year's harvest.

As one feed broker noted, "If there weren't a single bushel of farm crops harvested this year, there still would be ample tonnages of farm feeds available."

A feed manufacturer remarked, "Farmers do not appear to be concerned about the drouth because they have such ample carry-over stocks of feeds."

It is generally conceded, though, that the drouth, if continued through later growing months, will seriously affect this year's income of all valley farmers. Already it appears evident that Ohio Valley hay and alfalfa crops will be of such poor quality

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Merck Petition for Coccidiostat Filed

WASHINGTON — A food additive petition for the use of a new coccidiostat in chicken feed has been filed with the Food and Drug Administration by Merck & Co., Inc.

FDA announced that a petition has been filed for the issuance of a regulation establishing a tolerance for 1 - (4-amino-2-n-propyl-5-pyrimidinylmethyl)-2-picolinium chloride hydrochloride in medicated chicken feeds. The new product has the generic name of amprolium and, when cleared, will be marketed under the tradename Amprol.

The petition proposes a tolerance of not less than 100 parts per million (0.01%) nor more than 250 parts per million (0.025%) for the drug in medicated chick starter and finisher feeds to be used as an aid in preventing outbreaks of coccidiosis. Also proposed is a zero tolerance in the uncooked edible tissues of treated birds when the feed is used as directed.

NEW AFMA DIRECTORS — Newly-elected directors serving a three-year term for the American Feed Manufacturers Assn., photographed during the 52nd annual AFMA convention in Chicago are (seated, left to right): C. S. Langen, Moorman Manufacturing Co., Quincy, Ill.; R. E. Wendland, Wendland's Farm Products, Inc., Temple, Texas; Guy L. Cooper, The O. A. Cooper Co., Humboldt, Neb.; H. Langdon Robinson, Faultless Milling Co., Springfield, Ill., and Ogden Confer, Hubbard Milling Co., Mankato, Minn. Standing are (left to right): C. W. Tilson, Central Carolina Farmers' Exchange, Durham, N.C.; Nelson Polsby, The Yantic Grain & Products Co., Norwich, Conn.; Charles H. Riley, Cooperative GLF Exchange, Ithaca, N.Y.; Allen Schreiber, Schreiber Mills, Inc., St. Joseph, Mo., and Eugene E. Woolley, General Mills, Inc., Minneapolis.

New Policy Goals Approved

CHICAGO — A new statement of policy objectives for the American Feed Manufacturers Assn. was approved this week by the AFMA board of directors at its annual meeting in Chicago.

Dean McNeal, AFMA board chairman, commented, "The objectives of AFMA have grown with the feed industry but have not been formally restated since 1947. This new statement reflects the common goals and anticipated needs of the AFMA member companies who rely upon the association for leadership."

The new policy objectives, Mr. McNeal said, were developed after intensive interviews with AFMA member companies in all parts of the U.S., and after careful study by the AFMA public relations committee, staff and board of directors.

The statement reads as follows:

"Preamble: The American Feed Manufacturers Assn. emphasizes that a prosperous animal agriculture is fundamental to this country's well-being. Service to agriculture is the feed manufacturer's primary function, and basis for existence, growth and profit. AFMA pledges cooperation in all ways which foster the prosperity of livestock and poultry producers, and the welfare of the American food consuming public.

"Efficient, profitable production of livestock and poultry is essential for a stable agriculture since it represents the major segment of this economy. It improves the soil and converts products of the soil into highly nutritious, appetizing, and essential human food. To achieve this goal requires the application of proper breeding, management, nutrition, sanitation, and marketing practices. It is AFMA's purpose to encourage and initiate programs which will foster these practices.

"A progressive agriculture and feed industry depends upon the maintenance and continued development of the American system of free, competitive enterprise. AFMA recognizes its obligation and opportunity to contribute to this way of business life. It pledges compliance with existing laws and constant striving to improve such regulations, while reserving the right of constructive criticism. AFMA urges its members to accept their full measure of civic responsibility.

"Objectives of AFMA: 1. To keep its members informed with vital information concerning important developments and trends in agriculture, feed and food industries and related areas. AFMA shall supply information on such subjects as nutrition, sales, legislation and control measures, economics, purchasing, traffic, public relations and others.

"2. To provide a national voice and to coordinate activities which promote the welfare of the feed industry, agriculture and the general public. AFMA recognizes its responsibility as the spokesman for the feed industry's interests, both in the pursuit of regular inter-industry activity and in times of national or industry emergencies.

"3. To provide leadership and assistance relative to state and federal legislative and regulatory matters of significance to the feed industry, animal agriculture and the public welfare.

"4. To foster continual improvement in business ethics thereby increasing the confidence of the feed industry in its standards of operations. Constant vigilance must be observed in trade practices of our industry.

"5. To provide the opportunity for widespread acquaintanceship by means of national conventions, regional and committee meetings, and through other methods of communications. The personal exchange of ideas and experiences between feed manufacturers, and with other co-

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Production School Plans Outlined at Chicago Meeting

CHICAGO — Plans for the 11th Feed Production School, to be held Sept. 21-23 in Kansas City, were outlined this week at a meeting of the school's board of trustees. The meeting was held during the 52nd annual convention of the American Feed Manufacturers Assn.

One of the principal features of the program will be a thorough discussion of how feed plant managers can comply with Food and Drug Administration regulations on mill procedures. With FDA in-plant inspections on the increase, this part of the program is considered especially important.

Other topics to be emphasized at the school include particle reduction, dry mixing, proportioning, premixing, and liquids blending. New information developed through research work will be highlighted, too.

The three-day school is expected to attract hundreds of production and plant managers from feed companies in all parts of the U.S. Program sessions are of the "workshop" type, complete with various educational aids.

Advance registration can be made by contacting Feed Production

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PURCHASING AGENTS' UNIT—New members of the American Feed Manufacturers Assn. purchasing agents executive committee are shown in session during the 52nd annual convention of the AFMA this week in Chicago (left to right): seated, Keith Morgan, Jackson Grain Co., Tampa, Fla.; Theodore Harstad, Doughboy Industries, Inc., New Richmond, Wis.; A. L. Huggins, International Milling Co., Minneapolis, and E. G. Young, Illinois Farm Supply, Bloomington; standing, George Gibson, Yieldmor Feeds, Piqua, Ohio; L. S. Riford, Jr., Beacon Milling Co., division of Spencer Kellogg & Sons, Cayuga, N.Y; Jess Humpton, John W. Eshelman & Sons, Lancaster, Pa., and James Hogan, Ralston Purina Co., St. Louis. Mr. Harstad is the new chairman and Mr. Huggins is new secretary.

Teamsters Say Help for Poultrymen Depends Upon Anti-Trust Law Change

By Special Correspondent

VINELAND, N.J. — A Teamster Union official said here May 12 that the fate of Teamster efforts to help poultrymen depends upon legislation to revise the nation's anti-trust laws.

Joseph Konowe, administrative assistant to the teamster leader, James R. Hoffa, told reporters after a union meeting of some 350 poultry farmers that Teamsters will push legislation in the next Congress to amend the Capper-Volstead act to permit unions to bargain collectively for farmers.

Mr. Konowe conceded that amendment is essential to the poultry farmer-union movement.

The Teamster official spoke at the first general meeting of Local Union 530 of the International Brotherhood of Teamsters when poultry farmers installed temporary officers and received the Teamster charter.

"Due to the anti-trust laws we are in no position to undertake collective bargaining," Mr. Konowe told the gathering. "We first need an amendment of the laws to enable you to bargain collectively."

John Backus of Philadelphia, 10th vice president of Teamster International, described farmer-union coalition as a "novel problem" in an obvious reference to the anti-trust ban.

Not Employees

"You do not have the status of employees," he told the group. "You own and operate your own farms. That makes our problem difficult."

Referring to the Vineland farmer-union movement as a "pilot operation," Mr. Konowe said the union hopes to form other poultry farm locals throughout the country to strengthen the poultryman's bargaining position. He said a local is being formed in California.

Mr. Konowe, in discussion with reporters, estimated 75% of the Vineland farmers would have to join the union to insure success of the program. Some 33% or one third of the area's poultrymen have already applied for membership, he said.

"There is very little we can do for you unless you give us the power to represent you," Mr. Backus said.

The union is assessing members a $1 initiation fee and $3-a-month dues, $2.45 of which stays in the local office, according to Anthony Contaldi of the Teamsters' Washington office, assigned by Mr. Hoffa to handle unionization of poultry farmers.

Mr. Konowe, who described the poultry producer as the "forgotten farmer," told the group it is "suffering from lack of organization."

"Let's forget the philosophy of rugged individualism," he told the applauding audience. "If the truth be known, you will all survive or you will all go down."

Mr. Konowe said the organizer will move among farmers within the next 10 days.

Presiding at the meeting was Thomas Leone of Vineland, acting president of the new local. Introduced and speaking briefly was Vineland's mayor-elect, Albert Giampietro, who told farmers, "I am at your service if I can in any way help to bring back this glorious poultry industry."

Mr. Giampietro, an upset victor in Vineland's city election, also told farmers, "If you have hope and faith and belief in something, fight for it —I know."

In addition to Mr. Leone, acting officers installed were: Mrs. Miriam Katz, Vineland, vice president; Dominick Rados, Millville, secretary-treasurer; Richard Abate, Richland, recording secretary, and Dante Parenti, Minotola, and Charles Scheurer and Alfred Wolff, both of Newfield, trustees. Peter Matti, Richland, was installed as an associate member of the board.

A policy committee of 20 was appointed to name committees for by-laws organizing and publicity.

SUCCESSFUL FORMULA: FEED AND POLITICS

Feed and politics do mix, especially in Nebraska. Two recent success stories involving good friends in the feed industry substantiate this theory.

John R. Cooper, executive vice president, O. A. Cooper Co., Humboldt, Neb., feed manufacturing firm, is the state's Republican choice for governor. He won the GOP primary nomination over two opponents.

A friend of similar party identity, Ralph Beermann, Beermann Bros. Dehy, Dakota City, Neb., was successful in his first political venture. Republicans of Nebraska's third congressional district chose him above other primary opponents to represent their party in this year's race for Congress.

Only Millfeeds Show Any Price Strength

WASHINGTON—The weekly listing of average bulk prices and index numbers for feedstuffs compiled by the U.S. Department of Agriculture shows that wheat millfeeds were about the only items with any strength during the week ended May 10.

Animal protein feeds, especially fish meal, dipped deeply, as did alfalfa meal. Oilseed meal markets were fairly steady in their price movement, but averages for the nation turned up general weaknesses.

Average Bulk Prices and Index of Weighted Prices*
(Dollars per ton)

	May 10, 1960	May 3, 1960	Change from previous week
OILSEED MEALS			
Prices at prin. mkts.:			
Soybean meal	62.75	63.60	— .85
Cottonseed meal	59.20	59.60	— .40
Linseed meal	68.00	68.75	— .75
Copra cake or meal	71.25	70.50	+ .75
Peanut meal	49.25	50.50	—1.25
Index	81.1	82.0	— .9
ANIMAL PROTEIN FEEDS			
Prices at prin. mkts.:			
Meat meal	72.25	75.05	—2.80
Tankage	70.35	73.10	—2.75
Fish meal	93.75	98.25	—4.50
Index	66.3	69.1	—2.8
GRAIN HIGH-PROTEIN FEEDS			
Prices at prin. mkts.:			
Gluten feed and meal	45.60	45.60	...
Dist. dried grains	51.75	51.75	...
Brewers dried grains	40.25	41.00	— .75
Index	71.7	71.8	— .1
WHEAT MILLFEEDS			
Prices at prin. mkts.:			
Bran	36.95	36.90	+ .5
Midds. and shorts	38.30	37.70	+ .60
Index	68.0	67.4	+ .6
OTHER MILLFEEDS			
Prices at prin. mkts.:			
Hominy feed	42.45	43.85	—1.25
Rice bran	28.50	30.00	—1.50
Index	64.8	66.9	—2.1
ALFALFA MEAL			
Prices at prin. mkts.	50.40	54.80	—4.40
Index	97.0	105.5	—8.5
MOLASSES, FEEDING			
Prices at prin. mkts.	20.41	20.52	— .11
Index	60.7	61.1	— .4
ALL FEEDSTUFFS			
Index	74.7	75.9	—1.2
FEED GRAINS			
Prices at prin. mkts.:			
Corn	41.20	41.20	...
Oats	49.90	49.20	+ .70
Barley	41.50	41.60	— .10
Grain sorghums	37.80	37.60	+ .20
Index	67.3	67.2	+ .1

*Base period of index is 1947-49.
Source: Agricultural Marketing Service, USDA.

Broiler Prices Show Advances; Egg, Turkey Markets on Down Side

NEW YORK — Reduced offerings were primarily responsible for putting an upward rush behind broiler prices the week ended May 11. Some prices during the week ended May 11. Some price declines were noted in egg and turkey markets.

Prices of live broilers and fryers were 1@2½¢ higher in primary producing areas, the U.S. Department of Agriculture reported. Advancing prices, market specialists said, were more a result of declined offerings of live supplies—and not particularly due to increased buying interest, although there were instances where demand could be attributed to featuring ready-to-cook birds. By May 11, however, offerings of live birds were more in balance with current demand for the finished ready-to-cook product.

Trading in this week's egg markets centered on storing and breaking as production far outdistanced current consumer requirements.

Prices of large eggs were virtually unchanged at both terminal markets country areas. Mediums declined 2@ 3½¢ at Chicago and New York and wetre 1¢ lower at farmers in Iowa. Smalls were 3½@4¢ lower at New York as compared to a week ago.

Broiler Records Continue; Georgia Tops 11 Million Set

SALISBURY, MD.—Every week in recent weeks broiler records have been smashed. Georgia, for the first time, has gone over the 11 million mark in egg set.

That state last week set 11,085,000 eggs. National egg set for the 22 important broiler producing states was a record, too. A total of 54,494,000 eggs were set. This was 1% above the previous week and 13% above the corresponding week a year ago. Settings were up from the previous week in 13 of the 22 states. States showing sizeable increases included Pennsylvania, Georgia and North Carolina.

Delmarva made a record number of settings, too. The total of 5,842,000 eggs set was 1% above the previous week and 28% above the corresponding week last year.

The number of chicks placed in the 22 states totaled 37,960,000. This figure was 4% above the previous week and 9% above the corresponding week a year ago. Increases were reported in 16 states. The largest increases occurred in Georgia, North Carolina, Texas, Alabama and Maryland.

In spite of the prospects for more poultry in the future, the price last week improved in Delmarva. An average of 17.64¢ per pound at the farm was paid compared to 16.68¢ the week before. A year ago the average price was 17.19¢.

Chicago Club's Dance, Golf Outing Dates Set

CHICAGO — The Chicago Feed Club has announced dates for its annual spring dinner-dance and also its spring golf outing.

The dinner-dance will be held May 21 at the Evanston Golf Club in Skokie. A cocktail hour at 6:30 p.m. will precede the dinner to begin at 7:30 p.m. An orchestra will play from 10 to 1 a.m. A door prize drawing will be held for the ladies.

The golf outing has been set for June 21 at the Midwest Country Club in Hinsdale, Ill. Joe Kirkwood, well known golfer and trick shot artist, will put on an exhibition and golf clinic.

Government Units Agree Delaney Clause Too Rigid

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON—Both the Department of Health, Education and Welfare and the Bureau of the Budget are in agreement that the application of the Delaney clause is too rigid and that use of so-called carcinogens in feeds should be authorized if no residue remains in the products of the animal.

This was noted this week in connection with possible congressional modification of additive provisions of the food and drug law.

A possible change in the cancer clause of the food additives amendment is related to the question of action on color additives legislation pending in a House committee.

The House committee is considering a color additives bill which includes a Delaney provision. Members of the committee are said to have doubts and questions as a result of recent testimony by scientists on the cancer question. It is reported that unless the committee can agree on a Delaney clause provision in the color bill, it is probable that the measure will be shelved at this session, even though the Senate has passed a bill without a Delaney clause.

If there is no action on the color measure, it is considered probable that the food additives amendment will not be changed to permit use of carcinogens if there is no residue in the end product—a change now asked by the Secretary of Health, Education and Welfare and the Bureau of the Budget.

Officials say that while amending legislation now asked for the color bill, if approved by the committee and passed, would be a step in the direction of changes in the Delaney provision of the food additives measure, it would not be sufficient to permit FDA to modify its statement of policy regarding carcinogens as issued in May last year.

If the feed industry is to obtain any relief from the pinch of the Delaney clause this year, it is necessary that action be taken on both the color and food additives measures. Consequently, it is said to be important that the industry direct its attention to the problems a hand.

Paul R. Ray Resigns From Chickasha Post

FORT WORTH, TEXAS—Paul R. Ray has announced his resignation from his position as vice president of the Chickasha Cotton Oil Co., effective June 30. His future plans are indefinite.

Mr. Ray has headed up a completely integrated egg and turkey operation for Chickasha, supervising the feed operations, hatcheries, egg plants, farms and a grocery chain. Prior to joining Chickasha, he headed up the feed division and the Cuban operations of Burrus Mills, Inc., and earlier he was general manager of the soybean division of A. E. Staley Co. Mr. Ray got his start with Doughboy Mills, New Richmond, Wis., where he was vice president and general manager of the milling and feed operations.

Memphis Oil Meals In Weak Market

MEMPHIS, TENN.—Oilseed meal futures were irregular on the Memphis Board of Trade during the past week. Soybean oil meal was very weak, with most of the pressure on the current May delivery, as considerable deliveries were made on both the Memphis and Chicago markets, pit observers said.

THE GRASS SILAGE SEASON IS HERE

AND SO IS THE BIG, NEW SILOTRACIN SELLING OPPORTUNITY!

Silotracin represents what we believe to be the soundest selling opportunity to come along in many a season.

Silotracin is the new antibiotic silage preservative developed by CSC that prevents spoilage, protects the protein value of forage crops and stops offensive odors.

More than just a new product, Silotracin is an entirely new concept in grass silage preservation. Silotracin's *antibiotic action*, from specially processed zinc bacitracin, discourages the harmful bacteria in the silo which cause rotting and foul odors. At the same time, it encourages those beneficial bacteria that turn sugars and starches in freshly chopped grass into the necessary preserving acids (lactic, acetic, propionic).

It's easy to use. Good results can be expected every time, in all types of silos. It is non-corrosive, cannot harm machinery or equipment. It's completely safe for humans and animals. There is no antibiotic left in the finished silage. None can appear in the milk.

There's powerful advertising support, too. Silotracin ads are appearing regularly in such magazines as *Hoard's Dairyman, American Agriculturist, The Rural New Yorker, Pennsylvania Farmer, The Farmer, Wisconsin Agriculturist, Dairymen's League News*, and *Better Farming Methods*.

The silage season is here. And, with new Silotracin, so is your selling opportunity! This spring, sell the antibiotic concept of preserving silage. Stock up on Silotracin now. It comes in two forms — ready-to-use and concentrate. Silotracin is being marketed only through feed manufacturers. Write for full particulars, literature and samples. Write Animal Nutrition Department, Commercial Solvents Corporation, 260 Madison Ave., New York 16, N. Y.

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great product to do business with!

Cattlemen Brought Up to Date On Research at Washington U.

By DR. IRWIN A. DYER
Washington State University

The sixth annual Beef Cattle Day was held at Washington State University recently to help cattlemen keep up to date with the latest research in animal science.

Topics on production testing, nutrition, forage testing and computing center services available to Washington cattlemen, marketing, meats and the future of the beef cattle industry were discussed. Following the day's program, a feed clinic and a beef cattle fitting and showing contest were conducted.

SYSTEMS OF PERFORMANCE TESTING—Dr. Clayton O'Mary discussed the systems of performance testing. "The different programs, terminology and grading systems, combined with the lack of coordination between states confuse cattlemen and make them hesitant to begin performance testing," said Dr. O'Mary.

He summarized an experiment at Washington State by saying, "If bulls are within a month of the same age and there is not too much variation in weight, it doesn't seem to make much difference whether animals are on test for a constant time, a constant weight or a constant age.

"A group of animals with more variation in age and weight at the beginning of the test is needed in order to determine whether or not an animal is discriminated against because it is too young or too small when compared with other animals.

"If feed efficiency is one of the main items being considered in the selection program, then the testing system might make some difference in selecting bulls. As everyone can readily appreciate, a time-constant test is much easier to do because all animals are weighed on at the same time and off together, whereas much more labor is required in the other two systems."

PRODUCTION TESTING ON WASHINGTON RANCHES — Rudy Setzler, extension livestock specialist, told of the work being done in production testing beef cattle on Washington ranches.

This program is being conducted by working with individual ranchers where the entire herd is involved, and by working with commercial cattlemen where selected breeding stock, which represents only part of the herd, is used to produce herd replacements.

The first method is preferable. Where production testing of an entire beef herd is carried out, no attempt is made to feed animals individually and calculate feed efficiency. The more rapid gaining animals are assumed to be the more efficient gainers.

Care is used to avoid comparing gains from calves on different ranches because of variation in feeding levels. Experience has shown that once a cattleman starts production testing, he becomes more interested in other management phases of production and pays more attention to details of feeding, disease control and other management practices.

IRRIGATED PASTURES FOR FATTENING CATTLE—Dr. W. W. Heinemann spoke to the cattlemen on the irrigated pasture studies conducted at the irrigation experiment station at Prosser, Wash. Sudangrass and the millets produce excellent growth under irrigation in central Washington. Increased acreages of these crops have been grown in recent years for pasture and silage.

These warm weather grasses can be used as supplementary pastures during the latter half of the grazing season when perennial pastures may decline in production. Sudangrass and millet also are useful for temporary grazing if pasture is needed for additional livestock and in cases of seeding failures.

The trials conducted at this station with sudangrass and pearl millet justify the following conclusions: (1) Both are excellent crops for supplementary pasture or silage under irrigation in central Washington. Within six weeks after planting, these warm weather annual grasses provided abundant forage for grazing. (2) These forages can be used as "catch" crops following an early-harvested crop. (3) Yearling steers grazing Piper sudangrass and Starr millet made average daily gains of about 1.6 lb. This gain was comparable with gains from either orchard grass or tall fescue pasture, but less than alfalfa-orchard grass.

MINERAL SUPPLEMENTATION—Allen T. Ralston reminded cattlemen that the highest single item in the cost of producing livestock is feed, and that this feed may make up as much as 85% of the cost of beef production. Consequently, a thorough knowledge of the various chemical and physiological activities constantly taking place within the body is of prime importance if this major cost of production is to be reduced. The mineral content of the animal body is variable, depending upon age, state of reproduction and dietary regime.

Essential minerals are one of the basic keys to feed efficiency. Supplementation of the major minerals (calcium, phosphorus, sodium, and chlorine) and the trace minerals (iron, copper, cobalt, iodine, manganese and zinc) have been beneficial in many parts of the world.

Salt is not stored to any great extent in the body which necessitates a continuous supply in the feed. If the supply is interrupted for any length of time, feed efficiency decreases. Salt

(Turn to CATTLEMEN, page 94)

STEERING COMMITTEE—This is the steering committee for the new northeastern poultry exporting organization (left to right): S. C. Emerseon, Middlesex, N.Y.; C. F. Manbeck, Fredericksburg, Pa.; Wendell Macleod, Belfast, Me.; Carroll Dunham, Southbury, Conn., and Fred H. Matthews, Laurel, Del.

Northeast Group Unveils Plan to Expand Poultry Market Through Export Venture

NEW YORK — Poultry processors from virtually every state in the Northeast put their stamp of approval on a plan recently presented by the Northeastern Poultry Producers Council for expanding the total northeastern poultry market through a joint exporting venture.

The proposal, which NEPPCO has been developing for nearly a year, calls for the establishment of an export corporation whose stockholders would be both independent and cooperative processors and poultry marketing firms. The corporation would: (1) Develop, own and protect a brand name and design for the products it handles; (2) act as agent for its stockholders in selling, arranging for shipment and delivering poultry products overseas, and (3) promote in foreign countries the sale of poultry products packed by its members under the corporate brand.

A comprehensive analysis of foreign markets for both poultry and competing food products with detailed information on costs, packaging, grading and promotion was presented by Dr. Alfred Van Wagenen, NEPPCO's director of research and development, and D. R. Strobel, deputy director of the dairy and poultry division of USDA's Foreign Agricultural Service, who just returned from an extensive tour of European markets.

Steering Committee

To implement the proposed program, a steering committee was appointed with Carroll Dunham, NEPPCO vice president of Southbury, Conn., as chairman. Serving with Mr. Dunham will be Wendell Macleod, Belfast, Maine; S. C. Emerseon, Middlesex, N.Y.; Clarence F. Manbeck, Fredericksburg, Pa., and Fred H. Matthews, Laurel, Del.

Commenting upon this new venture, Richard I. Ammon, NEPPCO executive secretary who chairmanned the meeting, said, "This is just one of several 'Project 65' programs currently being developed by NEPPCO to aid poultry producers in the Northeast.

"A major problem of our egg producers has been finding satisfactory outlets for their fowl. The advent of the broiler-fryer has had a serious impact on the demand for the older 'stewing chicken.' While fowl is currently in short supply, we have had long periods in the past—and will again in the future—when it was difficult to find a market for these birds at any price.

"As the economy of foreign countries, particularly in Europe, has improved, so has the possibility of our finding new markets overseas. It is apparent, however, that to be successful, the export corporation must handle a full line of poultry products. Thus our broiler, turkey and duck producers also stand to benefit from this program. NEPPCO will continue to spearhead the move to insure Northeastern producers of their fair share of the benefits."

The steering committee, in its first meeting, laid plans for developing a charter, by-laws and detailed plans of operation for the new corporation. Formation of the export corporation is expected within a few months.

Dairy Ration Energy Talks Highlight Boston Conference

By DR. STANLEY N. GAUNT
University of Massachusetts

BOSTON—The second annual New England Dairy Feed Conference was held recently at Hotel Lenox. This conference, designed for feed manufacturers, was well attended with 55 present. An excellent exhibit on pelleting, hay-wafers, etc., was on display prepared by Dr. Lynn Brown, assistant extension dairyman, University of Connecticut.

Much of the day's discussion centered around considerations of energy in dairy rations, the relative merits of wide and narrow concentrate-roughage ratios and whether to measure energy by the total digestible nutrients or estimated net energy system.

ROUGHAGE UTILIZATION—Dr. Bruce Poulton, head of the department of animal science of the University of Maine, took the case of making maximum use of roughages. He pointed out that New England is natural grass country, and that we should make maximum use of it. In the opinion of Dr. Poulton, our dairy cattle must be selected and bred not only for high production but also on their ability to consume and utilize high quality roughage. He stated that the extent to which roughage nutrients can be used to support milk production will be influenced primarily by the quality of the roughage. In several experiments, cows on excellent roughage produced 65-75% as much milk as when grain was fed in addition.

Dr. Poulton stressed the importance of cow quality in her response to both roughage and grain feeding. In a New Jersey Experiment Station silage study some of the cows showed more than twice as much ability as others to increase production in response to grain feeding. Dr. Poulton pointed out that no attempt should be made to set artificial limits for grain feeding. As long as the response in additional milk produced per pound of grain fed is favorable, dollarwise, then it pays to raise the grain feeding rate.

HIGHER CONCENTRATE FEEDING—Dr. J. Murray Elliot, professor of animal nutrition, University of Massachusetts, pointed out that whereas the ruminant is able to handle large quantities of roughage efficiently, she is also a versatile creature and can handle with equal efficiency rations high in concentrates. He said a number of studies show ample evidence that high-producing dairy cows can very successfully be fed rations in which concentrates supply up to at least 80% of the energy intake, without encountering the physiological disturbances. If, for the moment, we conservatively accept this as a safe physiological limit for the high producing cow, we are still left with a wide range of concentrate-roughage ratios within which we can adjust our feeding program to fit the economic conditions.

In making roughage - concentrate substitutions and price comparisons TDN or digestible energy (DE) are very unsatisfactory measures of useful energy value.

These data show that while the digestible energy (DE) in concentrates

(Turn to CONFERENCE, page 14)

May Form National Warehousemen's Unit

DES MOINES—Prospects of forming a national association of independent grain warehousemen were announced at the second annual convention of the Independent Grain Warehousemen's Assn. of Iowa recently at Hotel Fort Des Moines.

James Potgeter, Steamboat Rock, executive secretary, told of a meeting in Decatur, Ill., at which the Illinois association was organized with John King, Hindsboro, as temporary chairman. He reported also on the recent expansion of the Missouri Warehousemen's Assn., with Ed Peyton, Westboro, as president. Plans are underway to form an independent association in Nebraska, also, he said.

Howard Roach, Plainfield, Iowa, president of the Soybean Council of America, Inc., in his address on "Future of Soybeans," said the means of getting agriculture out of its dilemma of surpluses is to raise more of the crop the world wants and less of the crops they don't want. He forecast an annual crop of a billion bushels of soybeans in the U.S. within five years.

Mr. Roach recently returned from a 90-day world tour in which he visited 17 countries investigating the possibility of developing the market for soybeans.

Since the problem of surplus will not be solved by economics but by politicians, he said the industry must provide the politicians with a number of tools for the solution. One method he discounted was giving things away, which he said produces disastrous results.

"Do-Nothing" Method

Another tool, the do-nothing method, and letting the law of supply and demand take its course, will not be sufficient, Mr. Roach said, as technical progress increases faster in this country than the population explosion.

"In South America, the Far East and the Near East, I found exploding knowledge of how the human body needs protein, and in these areas they want this protein from vegetable sources," he said. "Soybeans provide the best and cheapest source of proteins, and therefore we have this world demand. Now, it is our problem to find out how we can get soybeans to the peoples of the world."

He pointed to soybeans as the fourth largest crop produced in this country the past year; the others being cotton, corn and wheat—all being involved in the agricultural surplus problem.

Further storage facilities for handling Iowa's surplus corn will not be needed this year, a survey of the Iowa Independent Warehousemen's Assn. indicated. Marvin Smith of the Evanston regional office of the Commodity Credit Corporation said some of the corn now stored in the state will be shipped elsewhere at an early date, most of it from elevators and warehouses rather than from steel bins.

He discussed the proposal by the CCC that the storage rate be reduced from a basis of 16.4¢ bu. annually to 13.5¢ bu., which becomes effective July 1.

Within areas, the preference is still to be given to warehouse space over bin site space, he said, and in areas where the takeover is greater than are the facilities, the producers can deliver up to 30 miles away, a new decision. Other than that, the reconcentration will be from private warehouses, he said.

He also discussed the present loan program in his area, the amount being down considerably this year on wheat, but up on corn over last year, especially in Iowa.

Lee Dietsch, Lake Park, Iowa, was elected new president of the association, succeeding George Potgeter, Steamboat Rock. Lyle Pulley, Mingo, was elected new vice president; James Potgeter, Steamboat Rock, reelected secretary, and Paul Klinefelter, Gladbrook, reelected treasurer.

Early & Daniel Co. Ex-President Dies

CINCINNNATI — Edward Berkshire Terrill, 83, honorary chairman of the board of the Early & Daniel Co., died recently in Booth Memorial Hospital, Covington, Ky., following his collapse the previous night in his home in Fort Mitchell, Ky.

Mr. Terrill had served as president of the grain elevator and feed manufacturing firm from 1931 to 1951, and as board chairman until a year ago, when he was named honorary chairman. The Early & Daniel Co. was founded in Lawrenceburg, Ind., in 1881 by H. Lee Early and L. B. Daniel as a retail hay and straw outlet and, during succeeding years, expanded its operations to include the handling of grains and mixed feeds.

Mr. Terrill joined the firm as a young man and, following its removal to this city in 1893, he worked in various capacities prior to his election as president. As a company executive, Mr. Terrill was active in expanding the firm's grain elevator and feed mill facilities. He also was an active participant in a variety of local business and civic projects but, during recent years, he has been increasingly less active because of failing health.

REASONS WHY FARMERS DON'T BUY FEED

★

MINNEAPOLIS—Here's a handy reference passed on to feed manufacturers and dealers by Louis Brewster, manager, operations control, oilseeds division, General Mills, Inc., which tells (tongue-in-cheek) "month-by-month reasons why farmers don't buy feed":

January .....Wet corn being fed
February-March .....
.....Spring thaw, bad roads
April-May .....Busy field planting
June-July .....Cattle in pasture
August-September ..Busy harvesting
October-November .....
.....Cattle back in field
December .....Too cold

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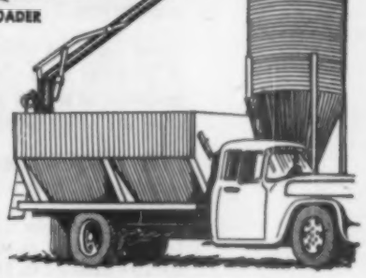

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Back Saver . . . attaches to any grain box. Exclusive unloading and loading anywhere, anytime. Pellets handled with minimum breakage. Smooth hydraulic operation.

Skoop Skipper . . . tank stabilization. Standard 2, 3, or 4 compartment units. Pamco positive seal assures against leakage of materials. Dispersing auger for loading leads into each compartment. Double gate per compartment standard for each unit.

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Histostat®-50 scores highest

• WEIGHT GAIN • FEED EFFICIENCY •

Once again Dr. Salsbury's Histostat-50 has been proven to prevent blackhead best and to provide other benefits needed by turkeys for fast, profitable gains. The following is taken from the "1959 TURKEY DISEASE CONTROL REPORT," University of Minnesota, Northwest School and Experiment Station, located at Crookston, Minnesota. It is reprinted here to give you factual data on a series of tests that are important to every feed man.

"Infectious Enterohepatitis (Blackhead) continues to be one of the more important turkey diseases in this area. According to USDA reports, death losses from this disease amount to over $3,750,000 annually, and there is an additional financial loss because other birds in the flock become infected but survive and show a loss of weight and market condition. Additional birds may be condemned at the time of inspection because of healed cecal or liver lesions.

"In the past ten years, progress has been made in the development of effective drugs, but the complete prevention and control of blackhead has not been achieved. Because there is little or no immunity to the disease, the preventive program has to be used on a continuous basis.

"The objectives of this year's projects were:

1. To compare the efficacy of .025 per cent 4-nitrophenylarsonic acid (Histostat-50), .025 and .035 per cent Nithiazide (Hepzide), .011 and .0166 per cent NF-64, .0166 per cent NF-179 and .011 per cent of furazolidone (NF-180) when used on a continuous basis to prevent blackhead.
2. To determine the effect of these drugs when used continuously from 4 to 24 weeks on the growth rate and finish of the turkeys.

"Four hundred turkeys were divided into eight flocks of 50 birds each (25 hens and 25 toms) and rotated clockwise at weekly intervals in the pens to insure equal exposure of all birds to the contaminated yard.

"The treatments employed from 4 to 24 weeks were as follows:

Lot 1B—Basal ration Minnesota Standard 25% protein.
Lot 2B—Basal+1 lb. Histostat-50 per ton.
Lot 3B—Basal+1 lb. 11 ounces Hepzide 30 mix per ton.
Lot 4B—Basal+2 lbs. 5 ounces Hepzide 30 mix per ton.
Lot 5B—Basal+2 lbs. NF-64 mix (100 gms. pure NF-64) per ton.
Lot 6B—Basal+3 lbs. NF-64 mix (150 gms. pure NF-64) per ton.
Lot 7B—Basal+3 lbs. NF-179 (150 gms. pure NF-179) per ton.
Lot 8B—Basal+2 lbs. NF-180 (100 gms. pure NF-180) per ton.

Blackhead Inoculations

"Fifty per cent of the hens and toms were inoculated with embryonated Heterakis eggs on July 24, 1959. The birds were fed only chopped yellow corn as their only source of feed and water for 20 hours prior to the inoculation. Medicated feeds were again fed on the evening of the day of inoculation. The other birds in each lot were exposed to the disease by natural contact.

Diagnosis

"All birds that died were autopsied and cause of death determined. The heart, liver, spleen and intestinal tract were fixed in formalin solution and sent to the Veterinary Laboratory for further study. This was to determine if any other diseases were complicating the blackhead losses.

Drug Analysis

"Representative samples of each feed at each mixing time were sent to the laboratory of the respective manufacturers for drug analysis. The drugs were prepared in a suitable carrier pre-mix, then added to a soybean meal base before being added to 1,000-pound mix of the Minnesota Standard Turkey ration.

"The analysis of the drug levels of the forty-eight mixings of the various rations showed good agreement between the theoretical and the actual amounts of the many different levels of drugs used in the experiments. The assays showed the percentage of drugs in all rations to be well within the limits of error of the analysis.

Conclusions

"From 10 to 14 days after the exposure the birds showed the effects of the disease particularly in the control pen. Losses occurred starting about 14 days after exposure. During the experiment, a few birds died from non-specific causes. There was no other disease apparent in the flock.

(Comparative data are given in table on next page.)

"Although the range has been used for these blackhead studies since 1951 and in earlier experiments heavy mortality was encountered from natural exposure, in recent years very little exposure has been obtained

NATIONWIDE SERVICE

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FLESHING • BLACKHEAD PREVENTION

Weight, Feed Efficiency, Finish, and Mortality Data

Lot Number	1B	2B	3B	4B	5B	6B	7B	8B
Drug Treatment	None	1 lb. Histostat 50	1 lb. 11 oz. Hepzide 30	2 lb. 5 oz. Hepzide 30	2 lb. NF 64	3 lb. NF 64	3 lb. NF 179	2 lb. NF 180
Av. Wt. Toms, Lbs.	21.96	22.94	21.81	21.95	22.47	21.49	23.44	23.05
Av. Wt. Hens, Lbs.	15.13	15.58	14.99	15.01	15.72	15.28	15.54	14.74
Feed Req. Per Lb. Gain	5.08	4.17	4.67	4.32	4.63	3.91	3.98	4.48
Feathering—Toms	93.75	98.75	94.44	100.00	100.00	89.29	98.96	97.50
Hens	100.00	100.00	100.00	100.00	98.75	98.86	100.00	99.00
Fleshing— Toms	84.38	96.25	90.28	84.38	92.30	80.95	92.71	88.75
Hens	100.00	100.00	100.00	100.00	98.75	98.86	100.00	98.00
Mortality Blackhead, %	24%	2%	12%	10%	22%	14%	4%	12%

from the soil. Heterakis ova have been administered for the past few years to supplement the pen exposure but in spite of this exposure there does not seem to be a buildup of the infection in the soil. Whether the constant use of the area with the continuous use of medication has played any value in reducing the amount of blackhead picked up from the pen exposure is open to speculation.

"With the exception of Lot 5B, the mortality was reduced 50 per cent or better. Lots 2B and 7B had the lowest loss from blackhead.

"At the time of evisceration, the organs of all birds were examined for evidence of lesions of Blackhead or any other diseases. A few birds showed healed lesions of blackhead, but had recovered to pass inspection."

What Does This Mean To You?

As a feed manufacturer or dealer, you'll surely want your customers' birds to have all the many benefits provided by Dr. Salsbury's Histostat-50. Also you'll be glad to know that Histostat is an "old drug" that does not require special paper work for FDA clearance. Please phone, write or wire today for a copy of Feed Manufacturer's Guide No. 16. Or, ask for a Dr. Salsbury's technical service adviser to call and personally answer your questions about using Histostat-50 to formulate a superior turkey feed.

Dr. SALSBURY'S LABORATORIES
Charles City Iowa

TO THE FEED INDUSTRY

CONFERENCE

(Continued from page 10)

is apparently used with considerably greater efficiency than that in roughage, the estimated net energy (ENE) is used with essentially equal efficiency regardless of the proportions of hay and concentrate in the ration. By virtue of the definition of ENE, this would be expected, as long as the level of feeding is held constant for all rations.

Now, if the proportion of concentrate in the ration is increased as a means of achieving a greater total energy intake, efficiency tends to decline as the energy intake increases. Work by Putnam and Loosli at Cornell University shows that the tendency toward increasing efficiency in the utilization of TDN as the proportion of concentrate is increased is more than counteracted by the tendency toward decreasing efficiency with increasing level of feeding.

It appears, then, as if the proportion of concentrate in the ration does not in itself affect the efficiency with which the ENE in a ration is used. Assuming a profitable level of feeding, therefore, and keeping within the physiological ability of the cow to handle concentrates, the choice of feeds should be determined by the relative cost of a therm of ENE (and in some cases the cost of protein).

This is certainly the approach that should be taken by the dairyman who does not produce his own roughage requirements, and must go to the market place to buy most of his feed. It may also be the answer for the increasing number of southern New England dairymen who must expand their herds to be efficient, but do not have sufficient land on which to grow roughage. The argument that hay can be produced much cheaper than it can be purchased (or replaced) is not always true in this part of the country.

TDN VS. NET ENERGY—Dr. A. M. Smith, assistant professor of animal nutrition, University of Vermont, and Dr. Stanley N. Gaunt, professor of animal science, University of Massachusetts, debated the merits of these two systems of measuring energy in dairy rations. Both pointed out that, in a quantitative sense, energy is the nutrient of greatest concern. Few cows really suffer from vitamin or mineral deficiencies and too many suffer from "hollow belly"—not getting enough feed. Most purchases should be on the basis of their energy content with some consideration for protein. However, this is seldom much of an economic problem in this area as 20% protein grain rations usually sell for little more than 16%.

The total digestible nutrients are essentially the total nutrients of a feed minus the nutrients in the feces. Actually, some nutrient loss in the urine is accounted for, too. It is a calculated value of energy assuming carbohydrate as a base and for that reason fat was multiplied by 2.25. ENE is simply the total nutrient of the feed minus the losses in the feces, urine, gases and heat increment.

Dr. Smith pointed out that ENE implied a great deal more accuracy than it really is. In contrast, he said, the productive value of a feed not only depends upon the quality of the feed itself but also on nutritive balance, activity and other environmental factors. As an example, he cited Brody's work concerning the influence of level of feed consumption. This work shows that the net energy rises with the intake of gross energy at a constantly decreasing rate. He further stated that the requirements for net energy are based on very limited observations which were conducted under controlled experimental conditions. In contrast, he said, our TDN recommendations are the results of a voluminous amount of literature collected from many different environmental conditions and which have been successfully used for a great number of years.

It is not desirable, according to Dr. Smith, to change a system that has been successfully used in the field unless a method is available that is more accurate and easier to verify by research methods.

The case of ENE was presented by Dr. Gaunt. He agreed that ENE is dependent on many factors which will vary some from one situation to another. Consequently, the value used for a given feed, particularly hay, might not be its productive value at a given time for an individual cow. Likewise, TDN would not indicate the net value either. However, ENE would indicate better what one could expect in the relative productive value of roughages vs. concentrates over many situations. Further, when it comes to its value for several cows or for the herd the average ENE values would be quite repeatable. The fact that a TDN value is highly repeatable is not enough when you consider it does not measure very well what we want—the relative productive value of all kinds of feed.

Hay vs. Straw — Dr. Gaunt said most dairymen know that late cut hay is a poor milk producer, yet TDN does not fully reflect this. As the fiber content goes up, and it does on late cut hay, the proportionate losses due to heat increment, increase. Net energy reflects these changes as shown in the following examples.

Alfalfa hay, cut in early bloom, has

Hard to Beat

Broiler Chicks from Pilch Females Crossed with a Leading Male Line.

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BS&B Asked The Men Who Bought KING-SIZE Storage, And This Is What They Said...

ELMORE GORHAM
Gorham Grain Company, Carlingville, Illinois
"This 36,000 bushel BS&B King-Size looks like a real bin. I want the tall King-Size Bins to use around my elevator to give me a larger volume where I can use my elevator machinery. We've never had any rodent or moisture or bird trouble."

JOHN (left) and WILLIAM WELLS
Wells Brothers Feed & Grain Company, Plano, Texas, told us:
"In our business we need a large number of separate bins. After a careful check of various bins on the market, we picked BS&B King-Size because we felt we got more for our money, better construction, and the type of bin that would satisfy our needs over a period of years."

ANSWERS CAME FROM ALL OVER AMERICA...

MAX JOHNSON, who operates the Redfield Grain Company in Redfield, Iowa, said:
"We've had no trouble with BS&B King-Size Bins all winter long. They are still standing good, and we know the beans in storage are in good shape. If we build more storage, it'll have to be with the vertical BS&B King-Size Bins."

AL MAVIS of the Mavis Grain Company at Rochester, Illinois, reported:
"Due to increased demand for storage, we are adding more of the 6,000 bushel BS&B King-Size Bins like we put up last fall. This way we are able to control a small amount of grain in one area. They are easy to fill and level off. People have already asked to buy any bins we may take down for "On-The-Farm" storage."

WILLIS KERR, Manager of the Caldwell Elevator Company, Inc., at Caldwell, Kansas, said:
"Last Spring we put up a number of BS&B 25,000 bushel King-Size Bins. We could have put up flat storage, but then these BS&B Bins came along, we liked the looks of them better and thought they would fit our purposes better than flat storage. If we should decide to build more storage, we'll add more BS&B King-Size Bins."

DICK POTTER, who operates the Morgan Grain and Feed Company in Morgan, Minnesota, reported:
"We recently erected 17 BS&B King-Size Bins. We felt that the BS&B King-Size was the most versatile for economical reasons... we didn't have all our grain in one place. The advantage gained over smaller bins was when we set up an auger to it we could stay there longer without moving."

a TDN value of 51.4, timothy hay, cut in early bloom, 51.7, and wheat straw, 40.6; whereas, the net productive values (ENE) for the alfalfa are 41.5 therms, timothy 39.8, and wheat straw 10. These are values in 100 lb. of each of these feeds listed in the 22nd edition of Feeds and Feeding. Good dairymen know that wheat straw is not worth four-fifths as much for milk production as good alfalfa or timothy hay. It figures out on the average that a pound of TDN in high quality roughage is worth for milk production only about three fourths as much as a pound of TDN in concentrates and in late cut hay or straw only two thirds or less.

Economics Dictate—Dr. Gaunt reminded the group that dairymen in many areas find it necessary to maintain intensive operations. Economics force them to decide whether to raise all their own roughage, or buy part of it or all of it. Using the TDN system to calculate best feed buys would often lead them to buy hay or other high fiber feeds that may be priced lower per 100 lb.; whereas, on the ENE system hay and the like would be the more expensive choice.

It is primarily for this reason of determining best feed buys on a comparative productive basis that we switched to the ENE basis a few years ago. The new centralized processing system of Dairy Herd Improvement Assn. with IBM equipment at Cornell University uses ENE for reporting to farmers grain recommendations. Every feed dealer should know about it and understand it, as it offers the dairyman much useful information on his feeding, management and breeding program.

ROUGHAGE SUBSTITUTE—Kaye Andrus, Ashford, Conn., dairy farmer, told of his 100-cow loose housing operations. Three years ago, because of expanding operations and a drouth, he was short of hay and silage. After checking with the authorities at the University of Connecticut, he purchased a roughage substitute—beet pulp—in carloads. His cows responded so well and the costs were lower per pound of milk produced, that he has since operated on this basis. Last year, only 37% of his feed nutrients came from a roughage—hay, silage and green feed, no pasture.

He also has purchased citrus pulp and hominy. He purchased feed on the basis of its lowest cost in therms of estimated net energy and palatability. The quality of hay available on the market, he found to be quite variable.

Mr. Andrus self-feeds hay and silage and the pulp feeds and the grain is fed according to production in the milking parlor using the DHIA-IBM recommendations as guides. By allowing cows the opportunity to eat all they want of the pulp feed, they just won't eat a lot of hay, he said.

The program opened in the morning with a talk by Dr. Neils Rorholm, head, agricultural economics department, University of Rhode Island. He pointed out that the best "Practical Approach to a Dairy Farm Business" is also the best theoretical approach. He said a theory is more nearly a general statement of workable or practical events. If an individual situation varies from the general then our application of the theory should be modified. He said that a good practical approach to a dairy farm business is to get a good understanding of the many theories involved. This is a difficult thing since many scientific theories are basic to dairy farming. He cited the field of management which is of overriding importance today.

Dr. Rorholm said "since specific advice has about as great a chance of being wrong as of being right, my practical approach would boil down to this: (1) Know the technical facts and keep up with the new ones. (2) Know the relationships of farm production. (3) Use an orderly approach to production planning. Let us take a look at the concept of production planning:

"On land and buildings within which a producer must operate, at least in the short run, my approach would be to take stock of these resources and try to see how they should be combined with variable resources such as cows, feed, fertilizer and labor; in short things that can be bought with operating capital. The goal, in most cases, would be the highest profits.

"The method I have outlined is called budgeting in the field of farm management. Its success depends on the realism which goes into it and on the imagination of the person doing it. Obviously you can't use methods in your business that you haven't yet thought about. Similarly, your estimate of returns from a given change in the business is only as good as the figures that go into it."

KETOSIS, CAUSE AND TREATMENT—This was the subject covered by Dr. C. F. Helmboldt, head of the department of animal diseases, University of Connecticut. The following are quotations from his talk:

"Ketosis (acetonemia, acetonuria, ketonuria) is recognized as a carbohydrate metabolic complex of cattle affecting chiefly dairy breeds. In spite of intensive research, the primary cause of this condition remains unknown. The latest theory involves a break in the general adaptation syndrone although experimental production of the disease by this means has not been accomplished.

"It has been the vogue since Seyle demonstrated the dramatic features of the general adaptation syndrone to employ such words as 'stress' and 'trigger.' It is probable that our lack of knowledge leads us to list many stresses as a cause of ketosis, such as obesity, emaciation; septicemias as seen in foot-rot, metritis, mastitis, nephritis, and traumatic gastritis; too much silage, not enough green roughages; too much milk production; cold, heat, exhaustion; deficiencies of vitamins and trace elements. Now it is

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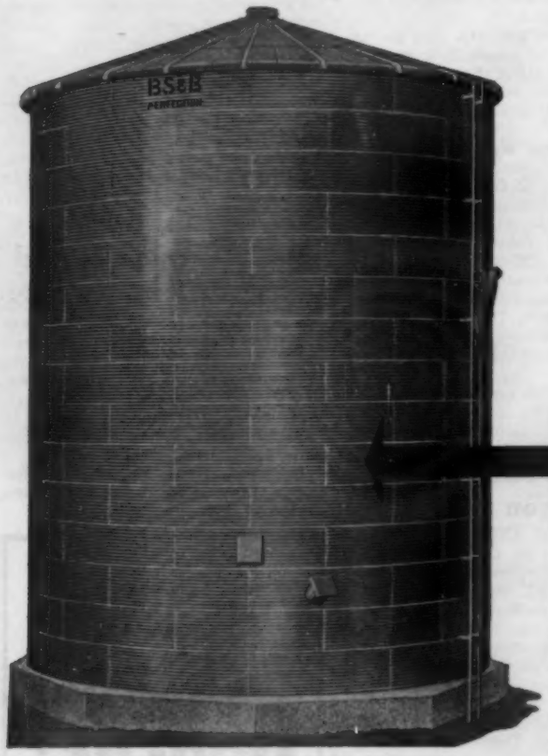

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Maximum Capacity*	Diameter	Eave Height	Auger Lgth. Required
22,591	36'	24'	62'
15,792	36'	16'	47'
12,388	27'	24'	51'
9,766	24'	24'	41'
8,757	24'	21'4"	41'
8,340	27'	16'	41'
7,752	24'	18'8"	41'
7,413	21'	24'	47'
6,744	24'	16'	41'
5,389	18'	24'	47'

Corrugated Steel Tanks

Maximum Capacity*	Diameter	Eave Height***	Auger Lgth. Required
36,186	36'	40'	**
29,388	36'	32'	**
19,987	27'	40'	**
16,188	27'	32'	62'
15,810	24'	40'	**
12,788	24'	32'	51'
12,039	21'	40'	**
9,726	21'	32'	62'
8,782	18'	40'	**
7,085	18'	32'	62'

*Maximum Capacity is based on 1.3445 cu. ft./bu., utilizing area under roof at angle of repose of grain, and including 5% compaction.
**Overhead Conveyor or Gravity Filled.
***All units above 24' high are braced with internal stiffeners.

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known that a ketotic condition can be produced by starvation, a form of stress. This condition is known as secondary ketosis. Thus, it is possible to produce ketosis, but unfortunately this is always secondary and not primary. The criteria of primary ketosis demand that a normal healthy appearing animal on an acceptable ration and in a favorable environment suddenly develop ketosis.

"Effect: The signs of illness of ketosis are essentially those of acidosis. The effect has a more profound action than the mere acid condition of the blood stream. The alterations in the liver are both dramatic and serious—serious enough to kill the cow. The liver cells react to the acidosis by changing the character of their fat content (fatty degeneration). Each new cell contains visible fat vacuoles, the liver itself becomes soft, is easily ruptured and orange in color. The sick liver cell now sets into action a whole series of most undesirable effects. In fact, of the 30 odd liver functions, all are inhibited and some even arrested completely.

"Treatment should be prompt and vigorous to reverse the liver changes and correct the adrenal insufficiency. All treatments are aimed at restoring the blood sugar level to normal. Immediate restoration of blood sugar level is gained by intravenous use of glucose and, furthermore, helps arrest or reverse the detrimental liver changes. Cortisone products, acetates, lactates, propionates, glycerol and propylene glycol all indirectly restore the blood sugar levels and affect prevention or treatment."

MILK RESIDUES AND MEDICATED FEEDS—This topic was covered at the meeting by Dr. J. W. Cobble, associate director of the experiment station, University of Rhode Island. Dr. Cobble said:

"Antibiotics, pesticides, growth regulators and other useful agricultural chemicals are an essential part of our food production but, to be able to continue their use, they must be handled properly and safely. Milk is unique in being such an important food that no residues from any of the above chemicals are permitted.

"In relation to milk residue from feeding, data are limited. At the Rhode Island station, it was found that in feeding Aureomycin at a level of .1 mg. lb. of body weight (approximately 120 mg.) to lactating cows no residues were observed. Rate of .5 mg. did show residues in the milk for periods of 36-48 hours. Recent work using Sulfamethazine, given under advice of veterinarian, appeared in milk 48-72 hours after feeding of the drug.

"Pesticides and fungicides and similar related chemicals pose the greatest problem for the milk industry in relationship to residue. First, they are not always under control of the dairyman but may be found on purchased forages and concentrates. Second, testing procedures are long and costly. Third, little research is available in the milk residue area.

"In the 1958 public health survey of 936 raw samples of milk from 48 dairies and 16 areas over a four-month period, 23 (2.5%) showed residues of .1 ppm. or more. Of the 936 samples, 168 were further examined and 3% of the samples showed significant residues. Using a fly-bioassay, 33% of the same samples showed residues. In the 1955 test, 62% of the milk samples showed residues using the fly technique.

"The most common contaminant found in the above surveys was DDT in corn silage (1.2 to 12 ppm.). In one milk supply 4.8-6.3 ppm. was found. Work at the Rhode Island station indicates that DDT residues were found in milk 21 days after the withdrawal of the feed. Other residues that have been found in milk include DDE, DDD, dieldrin, chlordane, BHC, lindane, aldrin and heptachlor.

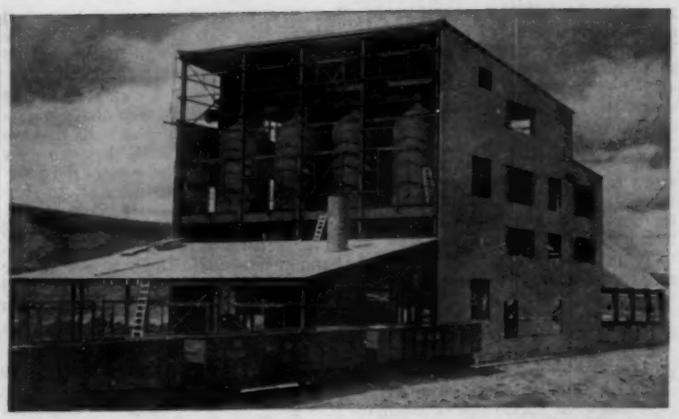
"Another source of residues in milk is the improper use of fly sprays around barns. At the present, the only safe materials that can be used without extreme care on cows and around the barn are sulphur, rotenone, pyrethrums and probably methoxychlor. Workers at the Rhode Island station indicate methoxychlor appears to be destroyed, at least in part, in the rumen.

"According to plant pathologists, the area of fungicides, relative to the residue problem, is practically untouched. Captan, Fermate, Thylate, liquiphene, bromides, etc., are some of the fungicides now in use. Their possible use along with pesticides in grain storage, by-products, etc., poses a threat to the dairy industry as well as other livestock."

PANEL DISCUSSION—On the top of the wealth of information presented by the authors of these papers, the panel discussion was held in the afternoon. Dr. Al Smith led this discussion.

The program was arranged and conducted by the committee composed of John McIntyre (Massachusetts), H. G. Savage (Vermont), W. W. Pierce (Massachusetts), H. M. Lockwood (Massachusetts), Dr. James Cobble (Rhode Island), Dr. A. M. Smith (Vermont), Dr. Robert Benson (Connecticut), Dr. Bruce Poulton (Maine), Dr. Harry Keener (Universiity of New Hampshire), and Dr. S. N. Gaunt, chairman (Massachusetts).

The committee announced that the new chairman for next year would be Dr. Al Smith, University of Vermont.



NEW SALT PLANT—Construction is nearing completion on this $2 million Dakota Salt & Chemical Co. plant east of Williston, N.D. Shown are the four 33-ton evaporators that will take the salt out of the brine as it is pumped out of the salt beds over 8,000 ft. underground. The salt is hydraulically mined from a 230-ft. thick salt bed located more than 8,000 ft. below the earth's surface. This is said to be the deepest salt mine of its kind in the north. The salt is mined at this level by forcing water into the salt bed under extreme pressure. The plant is scheduled to go into operation June 15.

Program Announced For Oregon Field Day

CORVALLIS, ORE.—Some topics to be covered at the Eastern Oregon Branch experiment station's field day on May 27, include the use of pelleted and wafered feeds for beef cattle, improvement of barley feeds for sheep by supplementation and use of enzymes in swine feeding.

Reporting on the research listed above will be Dr. J. E. Oldfield, animal husbandman. The meeting, to be held at Union, Ore., will begin at 10 a.m.

In addition to other reports, Dr. J. C. Miller, head of dairy and animal husbandry, will summarize current research in the dairy, beef, sheep, swine and small animal fields.

Persons attending will have a chance to tour the station to see steers in the feed lot, pens of Columbia and Targhee rams and ewes, crossbred lambs and grass plots.

Omaha Club Meeting

OMAHA—The Omaha Feed Club will hear about European agriculture at the group's dinner-meeting May 23 at Peony Park here.

Speaker will be Arnold Peterson, farm editor of Radio Station WOW, who will discuss the highlights of his overseas farm tours.

Worley Mills Buys New Mexico Mill

CLOVIS, N.M.—Worley Mills, Inc., has purchased the Green Valley Feed Mill in Tucumcari, N.M., it was announced by Clarence Worley, president of Worley Mills, Inc. The feed mill, built new in 1955, is a modern push button mill, complete with bulk feeding facilities, Mr. Worley said.

"The purchase of the Green Valley Mill will enable Worley Mills to service the growing volume of Okay feeds consumed in the northeastern area of New Mexico, more efficiently," said Mr. Worley.

In addition to the modern feed mill, complete with pelleting, steam rolling, mixing, and hay processing equipment, the mill includes feed lots with a 6,000-head cattle capacity, with additional warehouse space and alfalfa dehydrating plant being planned for future expansion.

Feed Party Scheduled

ST. JOSEPH, MO.—The St. Joseph Feed, Seed, Grain & Fertilizer Club has announced details for its club party and golf tournament. The event will be held June 7 at the Moila Club, with golfers teeing off between noon and 2 p.m., a cocktail hour between 6:30 and 7:30 p.m. and dinner at 7:30. Prizes will be awarded for both golfers and non-golfers.

Reservations may be made with Joe Joffee, Dannen Mills, Inc., chairman of the program committee.

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Program Set for Central Feed Unit's Annual Convention

MILWAUKEE—Credit, veterinary relations, nutrition and management will be among the subjects discussed at the 35th annual convention of the Central Feed Assn. June 6-7 at the Hotel Schroeder.

Leading off the general sessions will be Charles S. Force, president of the Grain & Feed Dealers National Assn. and partner in Little Bros., Kalamazoo, Mich., speaking on "Program for Progress."

Three talks are on the agenda for the afternoon session of the opening day of the convention.

First of the speakers will be J. R. McCann, manager of fire prevention, Ralston Purina Co., discussing the value of good housekeeping and fire prevention in operating a feed and grain plant.

Lawrence P. Wisniewski, Federal Intermediate Credit Bank, St. Paul, will tell his experiences in dealing with feed firms in arranging credit for farmer customers.

Concluding the afternoon session will be a talk by Prof. William E. Breese of the University of Wisconsin, Milwaukee, on retail credit. Mr. Breese will give an analysis he is making of feed credit practices among Wisconsin firms.

Three topics are planned for the final session Tuesday morning.

George Greenleaf, executive secretary of the Ohio Grain & Feed Dealers Assn., will discuss "Managing for Profit."

Mr. Greenleaf formerly conducted the elevator training course at Michigan State University.

Feed Man-Vet Cooperation

Long-range cooperation between veterinarians and feed men will be discussed by Dr. W. J. O'Rourke, executive secretary of the Wisconsin Veterinary Medical Assn.

The concluding talk will be one by Dr. Damon V. Catron, formerly head of swine work at Iowa State University and now at Walnut Grove Products Co., Atlantic, Iowa. Dr. Catron will tell "Why the Feed Failed," outlining reasons a feed may not perform on the farm even though it is formulated of highest quality ingredients.

Among the association officers to give reports at the meeting will be: E. H. Sather, Blue Ribbon Feeds, Inc., New Richmond, president; Harvey J. Thoma, Sugar Bush Milling Co., Sugar Bush, treasurer, and Eldon H. Roesler, publisher, The Feed Bag, Milwaukee, executive secretary.

The annual banquet will be held the evening of June 6, and the salesmen's club breakfast with floor show will take place June 7. A gemutlichkeit (hospitality) closing party, held for the first time last year, will be repeated again this year. It will immediately follow the closing session.

Members of the central board of directors, in addition to the officers, are: Edwin Bakke, Bakke Feed & Seed Co., Shawano; Hiram B. Hegge, Bar-Non Mills, Inc., Whitehall; Obert T. Asleson, City Feed Mills, Stoughton; L. A. Lauer, Hartford Elevator Co., Hartford; Myron Steffen, Steffen Elevator, Dale; Erwin Seno, Seno's Feed Store, Slades Corners, and Vincent Miller, Miller's Feed Store, Cadott. All are from Wisconsin.

North Carolina Official Advises Greater Use of State's Grain as Feed

RALEIGH, N.C.—North Carolina produces approximately 130 million bushels of grain annually, but has storage facilities to take care of only about 30 million bushels, according to figures compiled by Sidney D. Britt, state representative from Bladenboro, N.C., and chairman of the State Grain Commission.

"North Carolina is becoming one of the great producers of poultry, a fact that emphasizes the importance of grain production and the conservation of the crop," Mr. Britt declared. "It is emphasizing the big dollar waste that occurs because of the policy of rushing the grain production out of the state into distant markets, and then bringing the feed back for the poultry at heavy transportation costs.

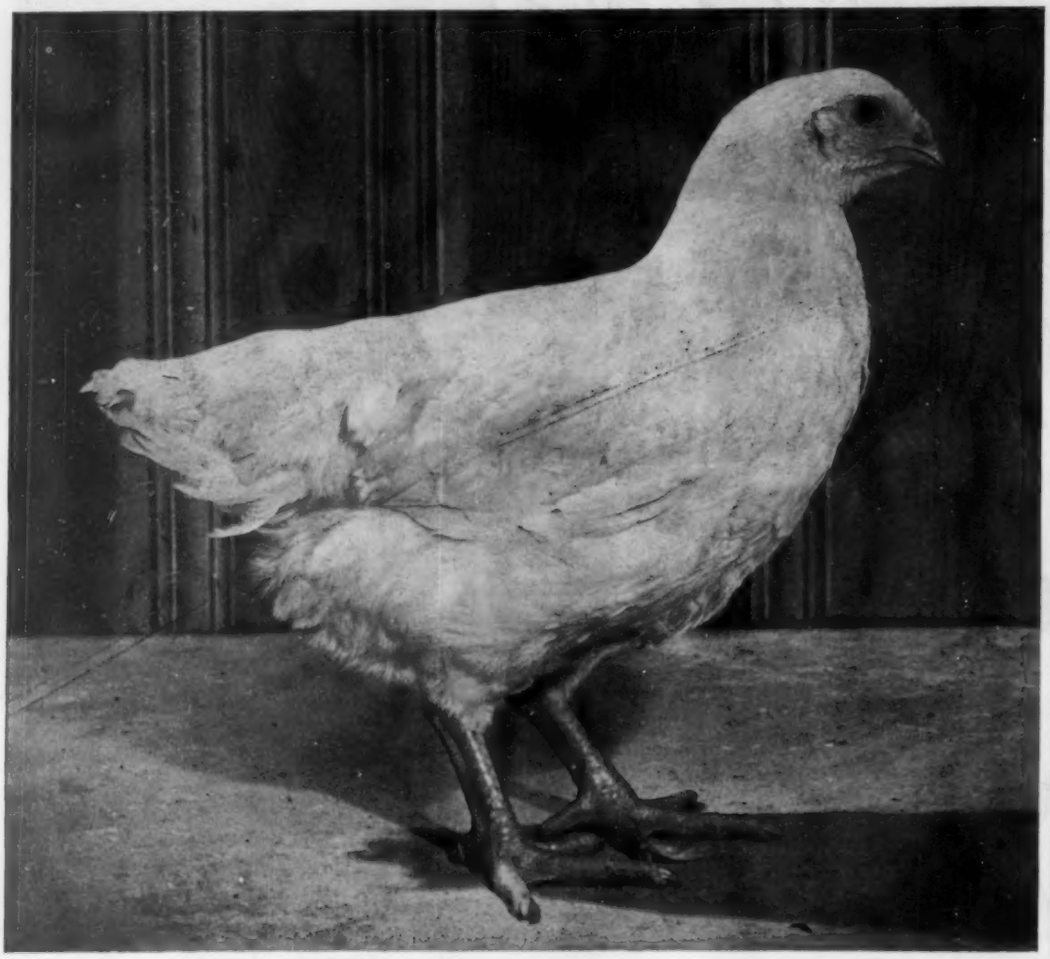
"The state has been trying to reduce the wastage of farm production generally by more emphasis on processing and conserving food and feed products. The survey now being conducted by the State Grain Commission is intended to lead the way to adequate provisions for conservation of the large grain production, and reduction of the tremendous wastage that now exists in connection with it.

"Lacking storage facilities adequate to protect the crop, North Carolina farmers are losing about $18 million a year because of having to rush their product to market when the market is glutted. In addition, some $16 million worth of grain is being wasted because of improper storage and the ravages of insects and rats."

The State Grain Commission was created by the 1959 General Assembly with instructions to study the problem of conserving and marketing the grain produced in the state. Mr. Britt said the agency would be ready to make a full report of its findings and recommendations to the next assembly session.

Joins A. E. Staley

DECATUR, ILL.—Appointment of Lance A. Wise as assistant public relations director of the A. E. Staley Manufacturing Co. and editor of the Staley Journal was announced by John N. DeBoice, public relations director of the Decatur corn, soybean and chemical processing concern. Mr. Wise joins Staley's from the Weirton Steel Company, in West Virginia, where he was editor of the Weirton Employees Bulletin.



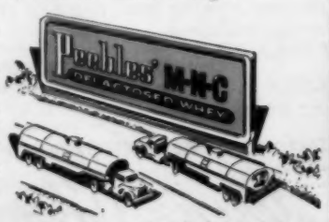
Peebles' M-N-C supercharges feeds with the WHEY FACTOR BONUS

Now M-N-C gives your broiler feeds a plus sales story as it supercharges with a bonus amount of Whey Factor...unidentified factor required for maximum growth.

Peebles M-N-C is partially delactosed whey-product, concentrated to provide 50% more non-lactose ingredients. Just 2½% M-N-C supplies the same amount of Whey Factor as 4% whole dried whey. The result is a *bonus* of elements that help resist disease, check stress problems before they start, keep birds strong, healthy, hungry and gaining fast throughout the year!

M-N-C also provides the ideal balance of the 12 amino acids needed for maximum protein assimilation. It offers the perfect, low-cost source for essential amino acids. M-N-C's smooth, even texture assures uniform high quality, color and distribution in mixed feeds.

Put more *sell* in your feeds with M-N-C with the Whey Factor Grow Bonus. Write—or wire—for complete information today.



WESTERN CONDENSING COMPANY
APPLETON, WISCONSIN
World-Wide Producer of Quality Milk Products
DIVISION OF DAIRIES, INC.

32 PLANTS *Coast to Coast*

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MOBILE EQUIPMENT AT ITS BEST!
ONE-MAN OPERATION
ONE POWER UNIT
(GAS OR DIESEL)
Write For Details

THE B&L MOBILE
BARNARD & LEAS Manufacturing Company INC.
CEDAR RAPIDS, IOWA

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85% T.D.N. at ⅓ Feed Cost

GRF
Grain Ferm[illegible] Factors

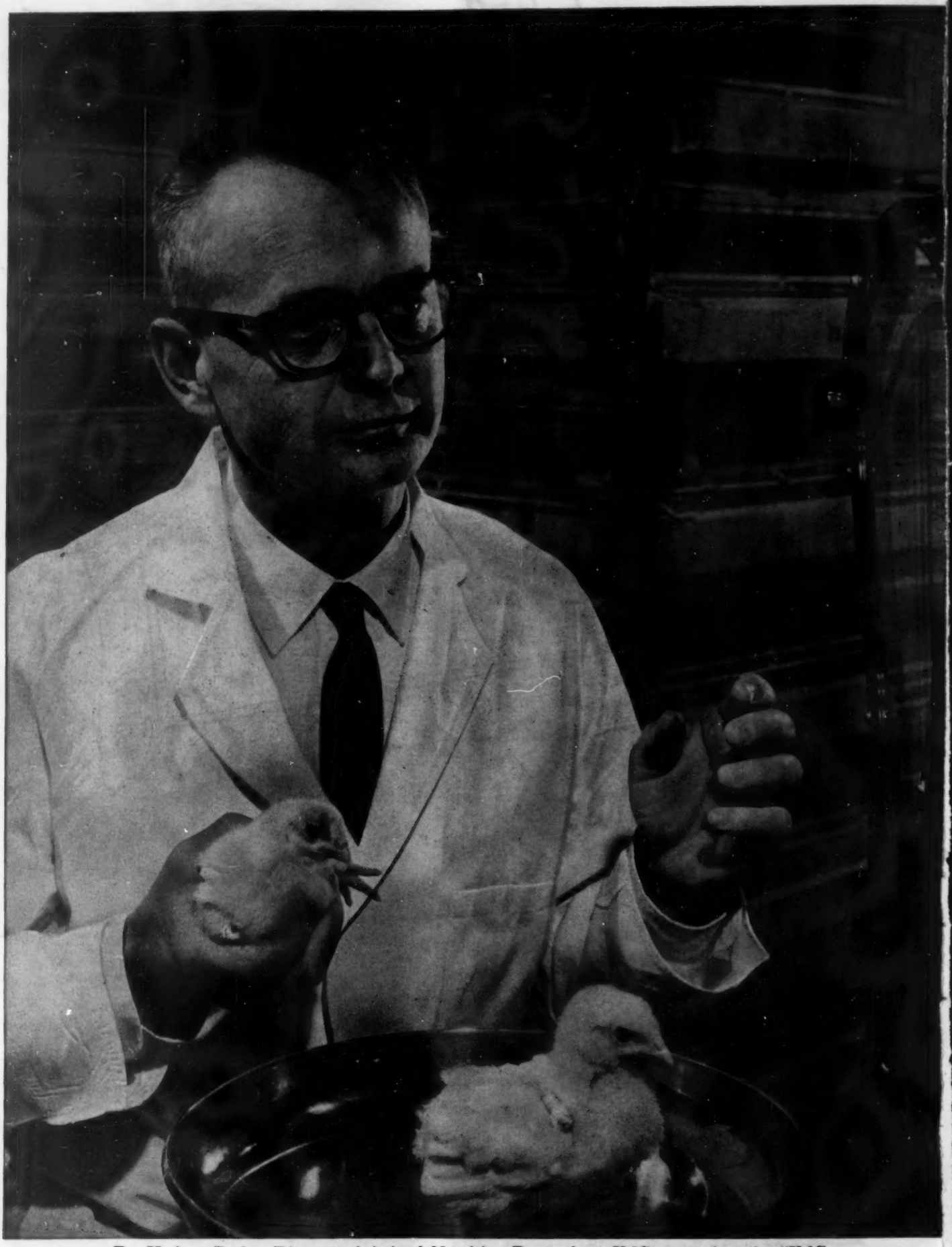
DISTILLERS DRIED SOLUBLES

- Protein 24-30%
- Fats 5%
- Mineral 6%
- T.D.N.....85%
- B Complex Vitamins Growth Factors

TESTS have proved that Distillers Dried Solubles belong in the poultry feeding picture! Feeds fortified with Distillers Dried Solubles give your customers 100% feed power at a fraction of the cost of expensive ingredients such as *dried skim milk*. They also reduce the quantity of animal proteins and other high cost supplements necessary to a well-balanced poultry diet. The reason for this greater feeding efficiency is because Distillers Dried Solubles contain all of the important proteins, minerals and B vitamins, plus vital growth factors.

For additional information write to Distillers Feed Research Council, 1232 Enquirer Building, Cincinnati, Ohio.

DISTILLERS
Feed Research
COUNCIL



Dr. Herbert Peeler, Director of Animal Nutrition Research at IMC, supervises the "IMC test" of feed phosphate value — the *IMC Biological Assay of Phosphorus Availability.*

Here's a testing technique that strips the shoulder pads from inferior phosphate sources . . . a test that shows all feed phosphates for what they *really* are.

CAN YOU BE "PRACTICAL" WHEN TESTING FOR BIOLOGICAL AVAILABILITY OF PHOSPHORUS . . . AND STILL BE ACCURATE?

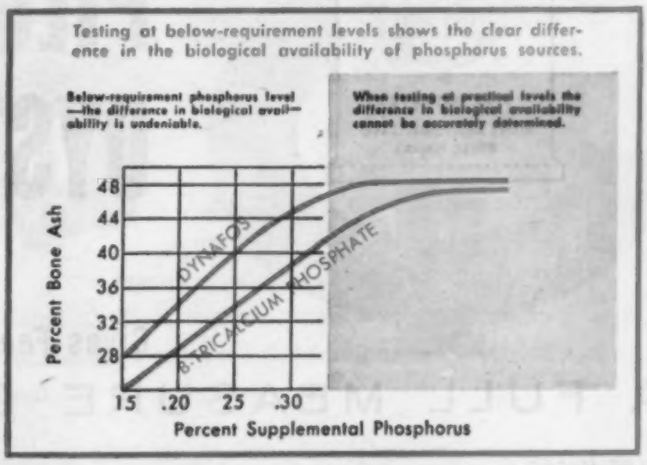
Most tests for biological availability of feed phosphates fail or are misleading because of the quantity or type of phosphate compounds existing in the test ration and the testing technique followed. In your selection of a feed phosphate, be governed by a scientific testing technique that gives you true dependable value . . . the *IMC Biological Assay of Phosphorus Availability.*

This test starts with a basal ration low in phosphorus . . . measures the true value of phosphorus sources at *below-requirement levels,* where even small differences in biological availability mean "life or death."

Contrasting sharply with the ultra-sensitive "IMC test" are the many tests conducted at a "practical" phosphorus level . . . where the test phosphate sources are added to typical commercial formula feeds. In these tests, the low biological availability of inferior phosphorus sources is masked by phosphate compounds in the test ration.

We conduct the IMC Biological Assay as a constant check on DYNAFOS quality . . . and to compare DYNAFOS against all other phosphate sources. Week in and week out DYNAFOS ranks as your most available source of feed phosphate . . . even more available than other dicalcium phosphates.

We invite you to evaluate the "IMC test" yourself . . . or to use it in your own laboratory. A note to the address below will bring you all the details.



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INTERNATIONAL MINERALS & CHEMICAL CORPORATION

IMC

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JOE BROOKS

BY AL P. NELSON

You Can Sometimes Capitalize on Trouble

It had been raining for two days, and the sky was still a dark gray. Farmers were grumpy because they couldn't get back to their field work. They knew, too, that after the rain stopped, it would require at least two days of sunshine and wind to dry the fields again.

The telephone in Joe Brooks' office rang shrilly, and Joe answered it. Outside the rain pounded against the office windows.

"Joe!" came the high pitched voice of Frenchy La Fave, helper on the mobile milling unit, "Moeller and me and ze mobile, we are stuck out on the August Langen farm."

"How deep?" asked Joe, calmly.

"Mon Dieu, ze mobile she is up to ze hub caps, Joe, and she is still going down. Ze ground she sizz and bubble like coffee in ze pot. Ze schedule for ze day she is shot. I'm so worried, Joe."

"Where is Molasses?" asked Joe.

Frenchy mumbled a curse. "Sitting in ze kitchen stuffing himself with kuchen and talking to Mrs. Langen and her daughter, Kathy. He is not worried. Mon Dieu, what a man!"

"Well, take it easy, Frenchy," Joe said reassuringly. "I'll send Milt Peters and Butterball out with the big grain truck. Maybe we can hook up to the mobile and pull her out. If we can't, we will have to phone Kuepper's Garage and get their big tow truck out. Meanwhile, we'll phone the rest of the customers on the mobile route that we can't give them service today."

"Oh," moaned Frenchy, "if we do not take care of ze customers, I will not have chance to sell them extra something for my commission. I need ze money. My payment on my used Renault, she is due Thursday."

"Well, that's two days away, Frenchy. And if you need money, you can draw an advance on your salary. I'll do that for you."

Moaning again about the troubles of life, Frenchy hung up. Joe went into the mixing department, a thoughtful expression on his face.

No More Orders

Milt Peters, Pop Henley, Smiley Johnson and Butterball were just sweeping up. They had no more custom orders and the daily production of Joe Brooks' Farmers Best Feeds had been completed.

"Milt," Joe said, "Frenchy phoned that the mobile mill is stuck out at August Langen's farm. You and Butterball drive out in the grain truck, and see if you can pull them out. Take a couple of chains along. If you can't do anything, then phone Kuepper's garage. Rusty and I will phone the rest of the mobile customers explaining the delay."

"These farmers!" burst forth Pop Henley. "When will they get smart and concrete some of those working areas, or build a gravel bottom? They know trucks will get stuck in wet weather."

"Quite a few farmers are improving their farm yards," Joe said. "We've been quietly urging them to do so, and it's working pretty well. Farmers don't like to be ordered to do anything. They're independent. They have to be persuaded."

"Huh," said Smiley Johnson. "Maybe people are too persuasive to farmers. We've persuaded them to let us handle all their feeding chores for them. We grind and mix the feed and put it into feeders or into storage bins. The farmer doesn't handle the feed. He even fires his hired men, and lets the feed dealer do the work."

Joe grinned. "If we don't do it, somebody else will," he said. "There is always a clinker or two in any business, and excessive service maybe is the clinker in our business. But it can't be helped. Well, Milt, you and Butterball better get out there. You've got a couple of hours before dark. And take our camera and flash along."

"Camera and flash!" exclaimed Milt. "What for?"

Joe smiled slightly. "Well, we must always try to turn catastrophe into profit, if we can, Milt. I want some very good pictures of that unit in the mud, so I can publish the pictures in the newspaper—in an ad."

"In an ad?" Milt was amazed. "Why?"

"To show that we'll go anywhere in any kind of weather conditions to give mobile on-the-farm service to a farmer," Joe pointed out. "As I recall, this is the first time we had to be towed out this year. Snowstorms delayed us two days, too, and that is all. Only tied up three days all year. Not a bad record. Lots of farmers will see that they can depend on our mobile service, and on all the other services we offer customers, on the farm or here at the mill."

Milt laughed. "Joe, you sure have the business outlook. I would never have thought of that. But I can see where such an ad would be different. And impressive. And would get additional readership."

"Sure," said Joe. "I might even have some reprints, and send one to every mobile customer. Might give them the idea of fixing their barnyards and feedlot roads so they can get better and quicker service. And

PILOT BRAND OYSTER SHELL

Gives Feed Dealers Everywhere

A FULL MEASURE OF PROFIT

PILOT BRAND is in demand the year 'round. There are no slack seasons. Best of all, you always make a good profit. Here are important reasons why:

PILOT BRAND is an ideal eggshell material.

PILOT BRAND helps poultry raisers get top production of stronger-shelled eggs.

PILOT BRAND is uniformly pure calcium carbonate, kiln-dried.

PILOT BRAND costs less per usable pound.

Powerful national advertising in leading farm and poultry publications and on 70 radio stations does a good job of pre-selling for you, and assures you repeat business.

Remember, there is no adequate substitute for PILOT BRAND Oyster Shell. It's a sure-fire volume and profit builder.

PILOT BRAND OYSTER SHELL FOR POULTRY

Oyster Shell Products Company
Mobile, Alabama

PIGNECTAR*
Sow Milk Flavor

. . . puts nursing palatability in pig pre-starter and starter feeds. Lets you dry nurse pigs off sow.

* Trademark

For Complete Information Write:
FLAVOR CORPORATION OF AMERICA
3037 N. Clark St., Chicago 14, Ill.

we can post a couple of reprints around the office and mill."

"I'll get some good pictures," Milt said, brightly. "And I hope there'll be enough film left in the pack to shoot a picture of Kathy Langen. She isn't a redhead, but I could like brunettes of her type, too."

"Dismiss that idea," Joe said sternly. "Frenchy says Moeller is already ahead of you. Molasses was eating kuchen with Kathy and her mother, when Frenchy phoned."

Milt smiled mysteriously. "Well," he said confidently, "let Molasses exercise his charms if he wants to. But when I get there, I'll exercise mine. And we'll see who wins."

"Okay," Joe said, "that is your affair. But remember, get that mobile out of the mud before you start any courtin'. If you don't, Frenchy will die of a heart attaack, and then we'll have a funeral on our hands, too."

Railroads Seek Feed Business, Says Official

MINNEAPOLIS—Railroads are determined to regain some of the feed freight business in the Upper Midwest, R. L. Thorfinnson, vice president in charge of the traffic department for the Soo Line Railroad in Minneapolis, indicated in a talk before members of the Northwest Feed Manufacturers Assn. at the Calhoun Beach Hotel.

"We need a revision in our basic scale of rates on westbound movement of feed from primary markets," he said.

Mr. Thorfinnson said that his railroad might have to go to incentive rates and service features, "but first we're going to explore getting westbound rates down."

He said that his railroad was hauling empties west to fill up with grain. His firm now is conducting an extensive study of the feed rate situation.

He said incentive rates are designed to try to increase the per unit loading in railroad equipment. "An incentive is offered to the shipper—normally a reduced rate. The amount of reduction depends on the increase in loading."

Mr. Thorfinnson explained to the group that some of the main types of incentive rates are alternative minimum, discount, per car and volume.

In the alternative rate, a rate is given if the firm ships 90% of its goods by rail. "This is good for meeting unregulated competition," Mr. Thorfinnson pointed out.

In the discount rate, the more the shipper can get in, the lower the cost, Mr. Thorfinnson. "This encourages maximum use of railroad equipment," he added.

In the per car rates, the shipper can load as much as he wants into the car up to maximum load standards.

The annual volume rate often is designed to meet the threat of the shipper to use water carriers, he said.

"All important is the type of rate needed to do the job," said Mr. Thorfinnson. He noted that very frequently the firm has to go to special equipment, and said it now has 12 different types.

Mr. Thorfinnson also discussed railroad mergers, saying that, for the most part, they often increase efficiency and reduce the cost of railroad transportation.

BIG CHIEF
Pit Augers • Elevator Legs • Mixers • Scalpers • Graders • Earcorn Crushers • Steel Bins

Hammer Mills 50 to 150 H.P.

Corn Cutters

CUSTOM MILLERS SUPPLY CO.
BOX 537 MONMOUTH, ILLINOIS
MANUFACTURERS OF QUALITY MILLING EQUIPMENT SINCE 1930

Rigid laboratory control ends trace-mineral worries

Lime Crest TRADE MARK BRAND

All Lime Crest trace-mineral pre-mixes, both standard and custom made, are under rigid laboratory control. That control begins with the ingredients and doesn't end until the final product has been checked.

Because of Lime Crest's complete laboratory control (both chemical and spectrographic methods are used) the feed manufacturer who uses Lime Crest trace-mineral pre-mixes need not worry that his feeds contain too little or too much of the trace minerals his nutritionist has specified.

LIME CREST TRACE-MINERAL PRE-MIXES
Made by LIMESTONE PRODUCTS CORPORATION OF AMERICA, NEWTON, NEW JERSEY
World's Largest Producer of Crystalline Calcite Products
CANADIAN DISTRIBUTOR: The Ash Chemical Co., 353 St. Nicholas St., Montreal 1, P. Q.

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IRRADIATED DRY YEAST
RICH IN VITAMIN D FOR FOUR FOOTED ANIMALS

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Dehydrated Alfalfa

Worth Crowing About!!
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New Plant at Individual feed mill NUTRITIONAL SERVICE

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Vitren Services and Products Are Also Immediately Available from These Offices:

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CANADA—Aldergrove, B. C., Box 26, Tel: 3821

Official Comments on Quality Control Need

SEATTLE—The Washington State Feed Assn. recently relayed to its members comments from the state control official on problems in connection with bulk feed and custom formulas.

An association bulletin quoted Allen Baker, supervisor of feeds, grains and chemicals in the Washington Department of Agriculture, as follows:

"The exacting competition faced by the feed industry appears to be causing some corner cutting becoming more evident to the Department of Agriculture.

"The transition to bulk sales is healthy for the industry; if you can sell feed cheaper in bulk, fewer growers will find the need to establish their own plants. However, contacts with farmers indicate some distrust with industry bulking practices. In substance, we are being told that poorer results are frequently experienced when bulk feed, presumably of the same analysis as previous orders of sacked feed, is delivered.

"There is also apprehension among feeders about custom formulas, over which we have limited control.

"As this word gets around, as it will among farmers, the trade can only be expected to experience a further rate of attrition, reflecting suspicion by farmers. We want to urge, through your bulletins, that corrective measures be taken voluntarily and early. You can hardly stand further demoralization."

Vice President Named By Weitz-Hettelsater

DES MOINES — Weitz-Hettelsater Engineers recently announced the appointment of William C. Folk as executive vice president of the firm's Kansas City office.

William C. Folk

He will serve as administrative head of the engineering and design activities of that branch, which specializes largely in engineering and construction of complete facilities for the grain, feed, flour and allied industries.

Before joining the Weitz-Hettelsater organization, Mr. Folk served as executive engineer for General Mills.

Prior to that time, he directed the design and construction of new plants and plant remodeling for Anderson, Clayton & Company, Houston, Texas.

Weitz-Hettelsater Engineers was formed in December, 1959, as a division of The Weitz Company, Inc., Des Moines. It represents the combination of the Jones-Hettelsater Construction Co., engineer and designer of bulk storage and processing plants and The Weitz Co., builder of industrial, commercial and institutional facilities since 1855.

Buffalo Begins Receipt Of Molasses from Cuba

BUFFALO, N.Y.—The first of several scheduled shipments of blackstrap molasses from Cuba to Buffalo this year arrived when the 11,500-ton freighter Amphitrite tied up at the Niagara River dock of Industrial Molasses Corp.

Her cargo of 5,000 tons represents the first of 30,000 tons which Joseph J. Colquhoun, manager of the firm's Buffalo operations, expects to import here via the St. Lawrence Seaway.

"We've got the Amphitrite lined up for at least six trips," Mr. Colquhoun said. "We're just hoping the discontent reported daily from Cuba doesn't interrupt the scheduled loadings."

M. P. Kleinhans Dies

EASTON, PA.—Marshall P. Kleinhans, 65, died recently in a Hollywood, Fla., hospital. He formerly had been vice president and production manager of Victor Balata & Textile Belting Co., Easton. Mr. Kleinhans had been with the firm 41 years.

Kray-9 dog food supplement gives you the 3 N's you need to outnose competitive dog foods.

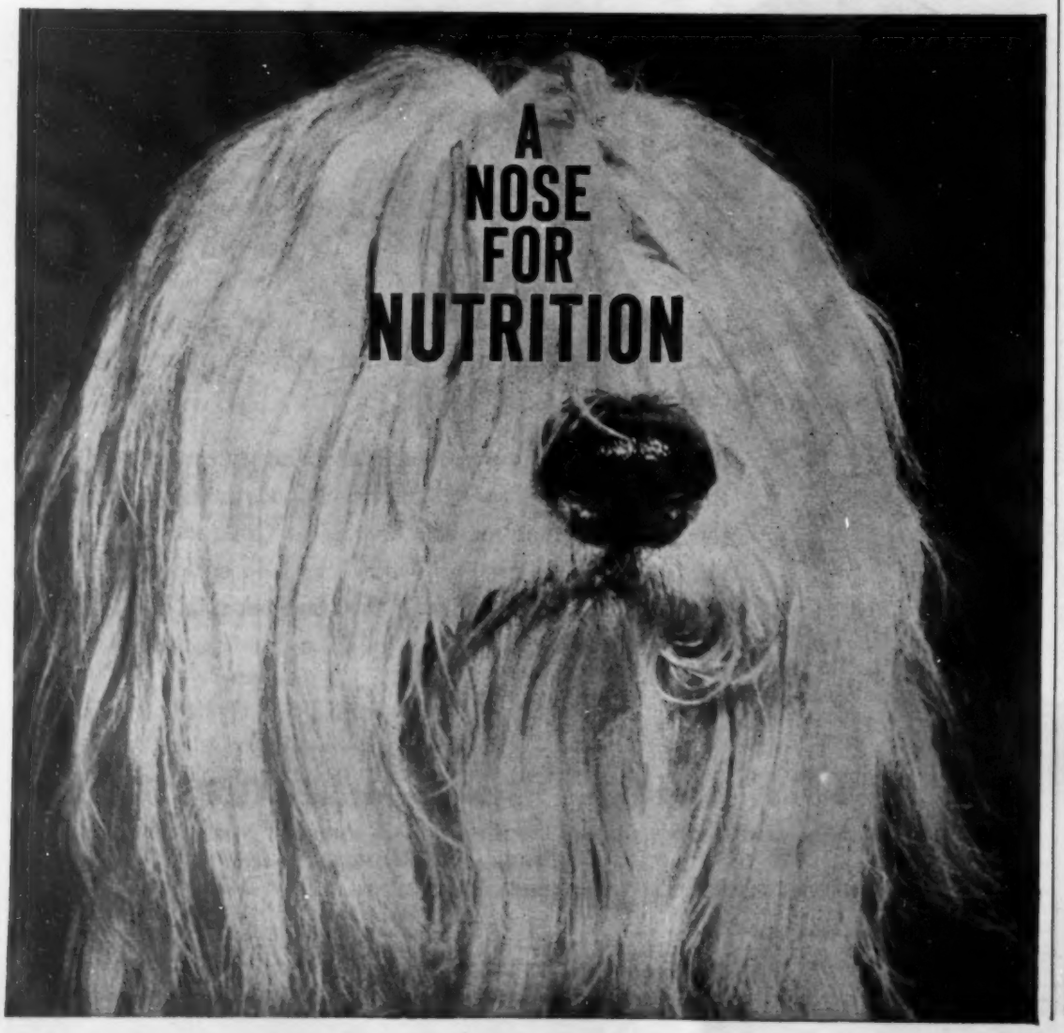
One N is Nutrition. One N is Nose appeal. And one N is Net profits, namely yours. Nutritionwise, Kray-9 supplies 6 vitamins, 6 minerals, and proteins galore.

But, frankly, the thing that makes dogs "demand" your dog food (and thus build your Net profits) is the Nose appeal from the fine Kraft cheese rind in Kray-9.

Ask your Kraft Man for Kray-9—in handy dry form for easy mixing with your other ingredients—to give you the best dog food possible.

KRAY-9 milk by-product dog food supplement by KRAFT

KRAFT FOODS, AGRICULTURAL DIVISION • CHICAGO 90, ILLINOIS

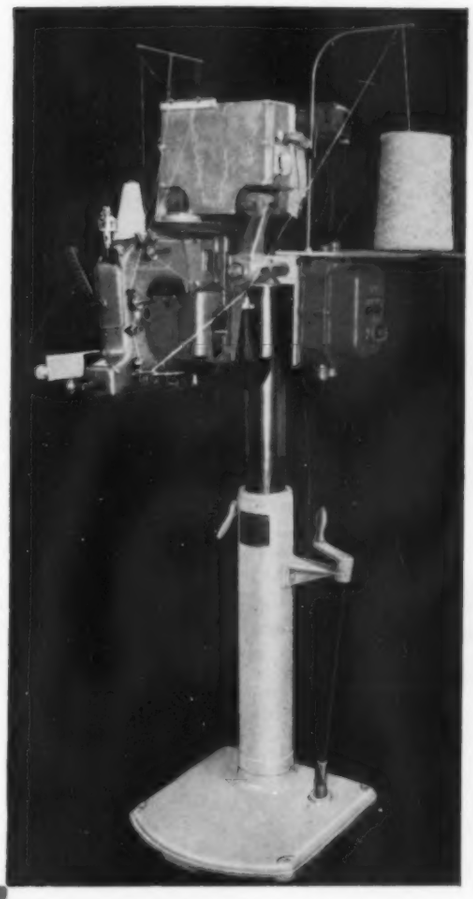


Marion MIXERS

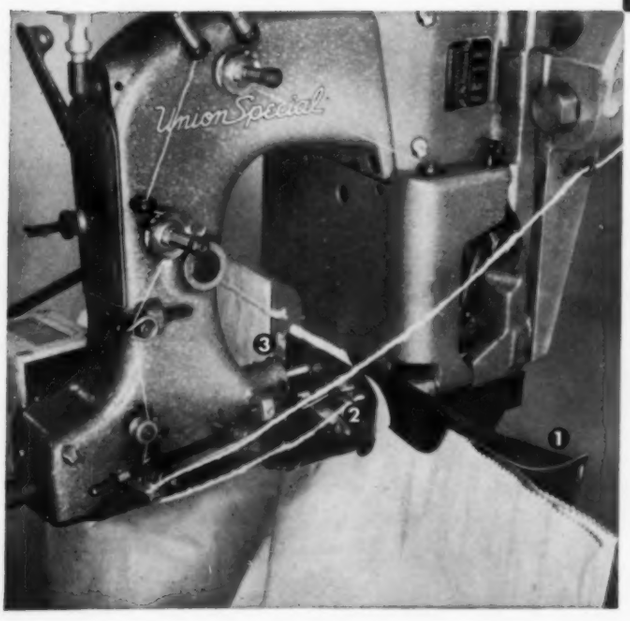
ELIMINATE GUESSWORK IN MOLASSES MIXING!

Complete accuracy in Molasses mixing bag after bag!
One mixer For All Your Mixing Needs.
Mixes Both Dry and Molasses Feed.
SEND FOR FREE LITERATURE:
RAPIDS MACHINERY CO.
887 11th Street Marion, Iowa

You'll get faster, uniform, trouble-free bag closing with the New Improved Bemis Sewing Machine Pedestal (with Union Special Head)



The New Improved Bemis Sewing Machine Pedestal is a development of Bemis Packaging Service . . . "Customer Center for Sewing Equipment."



Here's why...

1 The Bemis E-Xpeditor Guide forms the bag top and guides it into the sewing unit at a predetermined height so the closure is *always* straight and uniform. And it does this *faster* than you would do it otherwise... so, *speeds production*. **2** Bemis' Micro-sensitive Actuator automatically starts the sewing operation when the bag touches the actuator. No misses . . . no false starts . . . no unnecessary stops. In short—"No bag . . . no sew." **3** The Bemis Automatic *Mechanical* Clipper cuts the thread chain at exactly the right place every time . . . thus, saves thread.

Still Other Important Benefits of the New Improved Bemis Sewing Machine Pedestal

● The sewing head is easily synchronized with the conveyor through a variable speed sheave; proper tension is maintained. ● The sewing head is quickly and easily adjusted to varying bag heights. ● A portable frame is available for positioning the machine in different working areas.

Ask your Bemis Man for the *complete* story; it will pay you.

GENERAL OFFICES—
111-F N. 4th St., St. Louis 2
Sales Offices in Principal Cities

Where flexible packaging ideas are born

NITROPHE

TIME-PROVED COCCIDIOSTAT MAKES NEWS!

Always the economical, safe, effective coccidiostat — it now comes to you newly formulated for convenience and low cost

You know Nitrophenide as one of the earliest and most effective coccidiostatic drugs. This drug was chosen originally by Cyanamid on the basis of its high anti-coccidial activity—particularly against cecal and intestinal coccidiosis—and because of its relatively low toxicity and its economy of use.

Nitrophenide has been fed in formula feeds for more than 10 years with safety and effectiveness. It is *time-proved on poultry farms.*

A balanced coccidiostat

Nitrophenide is not an overpowering drug...it does not kill *all* oöcysts. It has the balance most desired in a good coccidiostat: it is *strong* enough to prevent coccidiosis outbreaks and yet *mild* enough to permit the development of immunity from either natural or vaccine-induced exposure.

New formulation at lower cost

Now . . . this superior coccidiostat comes in a new formulation known as NITROPHENIDE-20. This 20% premix of nitrophenide can be easily incorporated into feeds at one recommended level: 2 pounds per ton of feed. It is safe for all growing chickens at this recommended level. It may be fed to broilers right up to market day and to replacement pullets up to housing time.

Incorporate NITROPHENIDE-20. It is available to you at its most favorable price in history. American Cyanamid Company, Agricultural Division, New York 20, N. Y.

CYANAMID
NITROPHENIDE-20
IN FORMULA FEEDS

CYANAMID SERVES THE MAN WHO MAKES A BUSINESS OF AGRICULTURE

PACO makes Pellets best!

Pellets made with Paco mean repeat business, because Paco-ized pellets are entirely different from any other pellet.

Paco is a feed ingredient in itself, supplies plenty of essential nutrients for greater feed conversion and productivity. Its rich, molasses flavor adds palatability to all types of pelletized feed.

"Fines" are a thing of the past with Paco, because pellets form better and hold their shape until they are fed! That means less waste that normally increases feeding costs. Paco-ized pellets are glossy, slick in appearance, hold down choking dust in cattle feeds.

You can use Paco with confidence. Once customers see, smell and experience the goodness of Paco-ized pellets, once they watch meat, milk or egg production go up—you're in for additional business.

Get Paco, packed in convenient-to-use 50-lb. bags. Write us for information on pelleting and farm uses of Paco.

PACO MOLASSES DISTILLERS DRIED SOLUBLES

A PRODUCT OF
PUBLICKER INDUSTRIES INC.
1429 WALNUT STREET, PHILADELPHIA 2, PA.
PHONE: LOCUST 4-1400

MIDWEST SALES AGENT—The North American Trading and Import Co., 101 Arsenal St., St. Louis, Mo. Tel: PRospect 6-0858
SHIPMENTS FROM PHILADELPHIA, PA. AND GRETNA, LA.

FEAR OF STRONTIUM 90 IN MILK 'MISDIRECTED'

WINNIPEG — The scare over the strontium 90 content of milk is somewhat misdirected, according to Dr. C. F. Bentley, University of Alberta. He says that strontium 90, a radioactive fallout material originating from the testing of atomic and hydrogen bombs, has now, for practical purposes, contaminated every living plant and animal in the world, and that milk contains considerably less strontium than the feed which the cow consumes.

During the process of manufacturing milk, the proportion of strontium to calcium is considerably reduced by the cow's digestive and urinary systems, and also by her mammary gland. Consequently, the amount of strontium in the milk compared to the calcium is only about one eighth as high as it was in the food, Dr. Bentley said. Therefore, the person who is getting his required calcium from other sources such as vegetables, is probably consuming more strontium 90 than the milk drinker, the Canadian scientist commented.

St. Louis Milling, Grain Club Holds Outdoor Meeting

ST. LOUIS—The St. Louis Milling & Grain Club inaugurated its 1960 season with a golf outing and dinner at Glen Echo Country Club in St. Louis County recently. There was a turnout of 135 members and guests. The afternoon was devoted to a golf tournament in which 48 golfers participated.

Lane Moore, Cereal Byproducts Co., president of the club, presided at the dinner following the afternoon's activities. He introduced and officially welcomed a large number of both local and out-of-town guests. Twelve new members were approved, bringing the club membership to a total of 194.

The guest speaker was Ray Prochaska of the coaching staff of the St. Louis football Cardinals, the professional football team that recently transferred from Chicago to St. Louis.

After distribution of a number of golf and attendance prizes, and a brief discussion of club problems, Mr. Moore announced that the next meeting of the club would be another golf outing which is scheduled for June 7, at Lockhaven Country Club in Alton, Ill.

Units to Cooperate

WESTFORD, MASS.—Charles F. Shelnut, New England Egg Producers Assn. president, has announced that an agreement has been reached with the New England Council which will form the basis of increasing cooperation between the two regional agencies.

Mr. Shelnut said that the New England Council's "broad knowledge and ability in the promotion of New England's resources would be very helpful to the Association in expanding the scope of its Quality Egg Council Seal of Quality program."

Francis E. Robinson, manager of the natural resources department of the New England Council, indicated that such promotions of specific agricultural commodities on a regional basis were "of vital concern to his organization" and that he felt that the Quality Egg Council program "warranted the strong support which the New England Council might provide."

Canadian Official

OTTAWA—C. H. Jefferson was recently appointed chief of the feed, fertilizer and pesticide section, plant production division, in the Canadian Department of Agriculture.

Mr. Jefferson, who succeeds C. R. Phillips, is a member of the Agricultural Institute of Canada.

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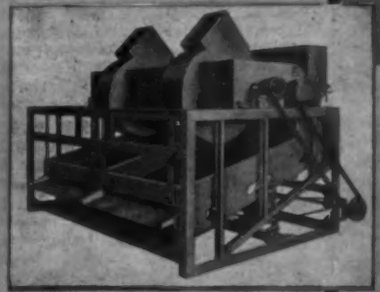

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Beacon Milling Shows Research Facilities, Describes Procedures

By JAMES W. MILLER
Feedstuffs Staff

CAYUGA, N.Y. — Current feeding and management trials under investigation at Beacon Milling Co.'s poultry research farm and a new windowless poultry laying house were observed by a group of feed, farm and poultry press representatives when they toured the company's facilities near here April 22.

Of special interest was the laying house which features a controlled pressure duct ventilation system. The press group witnessed about 16,000 layers, broilers, ducks and turkeys involved in 50 different nutritive and management experiments at the 60-acre farm.

Built of haydite blocks, the windowless layer house was completed in November, 1959. Its dimensions are 36 by 140 ft., including a 36 by 18 ft. feed room. Thirty-two pens in the house are divided by an 8-ft. center alleyway. Including the cost of construction, electrical work, water system and ventilation system, the building cost around $17,300.

Built by the Farm Engineering & Supply Co., the ventilation system consists of two 12-in. ducts running the length of the pen area from two blending recirculating boxes; low pressure duct on one side, and high pressure on the other. Exit holes were pre-measured and cut into the 12 in. duct every 22½ in., or approximately 60 holes per duct. Sixteen 6 by 32 in. exhaust openings on the low pressure side of the building handle over 24 complete changes of air per pen per hour.

The system provides a method of introducing fresh air into the building in such a manner that it doesn't upset the balance between pen temperatures and the incoming air, R. I. Millar, Beacon poultry specialist, explained. It equalizes temperatures in the pens so that there will not be over 5° difference anywhere in the pens; drafts will be eliminated along with hot and cold air spots, and ammonia build-up will be nil.

With over 75% of Beacon's feed tonnage in poultry feeds, the company has paid close attention to research and management of broilers, layers and turkeys, Dr. John M. Snyder, director of poultry research, said during the tour of the farm.

LAYER FEED RESEARCH—"As to laying feeds we must continue to ascertain more definitely the nutrient needs of hens. The strains of birds are changing constantly, and are improving. We must know definitely what the requirements are for changing breeds, and especially to nail down optimum nutrient balances," Dr. Snyder declared.

"We can see an increasing need to do research with hormones," he added. "We will pay increasing attention to arsenicals, antibiotics and unidentified factors. At this point it seems that we will be special-processing certain feed ingredients. A process method which will either destroy growth inhibitors, or render cellulose-like materials more available, shows great promise."

Dr. Snyder explained how the Beacon farm has concentrated more in smaller pens with more replicates for investigation. "Where we once had two pens of 600 birds each, we now have 20 pens with 45 birds each," he added.

Further, more factorially designed experiments must be set up in order to study the multiplicity of interactions, the research director stated. At the present time, for example, the farm has a factorial design underway in which high and low protein diets can be studied, in the absence and presence of unidentified hatchability factors, with 2.5% calcium as compared with 5% calcium and in the absence and presence of cockerels in the pens. "With such a design, we can turn out a tremendous amount of meaningful data in a short period of time," Dr. Snyder said.

Beacon research has not found the continuous feeding of broad-spectrum antibiotics to be economical, according to Dr. Snyder. But production response from arsenicals has been "more than sufficient to warrant their use" and certain hormone additives have been found to be efficacious.

"Currently we are spending a great deal of research effort in ascertaining the needs, if any, of unidentified nutrient factors for laying hens," Dr. Snyder reported. "Under our conditions, layer performance has been surprisingly good when rations devoid of unidentified factors were fed." He noted that it has long been held that alfalfa is a rich source of a number of critical feed nutrients, but added, "The real question is, Does it contain unidentified nutrients which are required by the laying hen? Our research thus far would indicate 'No'."

Continuing his discussion of current Beacon research, Dr. Snyder commented, "Likewise, production responses forthcoming from the added meat factor, fish factor and fermentation factor have been surprisingly small—when the experimental diets were made to contain the same known nutrients, with the same balance of nutrients, as those in the diets containing fish, meat and fermentation products."

"Balanced" Protein

Dr. Snyder said "stretched" or "balanced" protein also has been in Beacon's research limelight. He explained that this concept involves the pulling down of the protein level of the diet so there is just sufficient protein to supply the second limiting amino acid and then pushing up the first limiting amino acid, namely methionine, through the use of synthetic methionine.

"On this score," he said, "our research results have been sufficiently promising that we are now merchandising a poultry feed in New Jersey which is formulated on the basis of the 'balanced' protein concept.

"It is quite evident, of course, that the problem of actual amino acid (protein) requirements of the laying hen is indeed complex. Ever so much depends upon the bird's rate of lay. Thus, the requirement of a young leghorn pullet, laying at a 95% rate, is theoretically 18%. It seems evident, however, that this high level of protein can be rolled back to perhaps 16.5% with the use of supplemental methionine."

Experimentally, Beacon has found it possible to increase the calcium content of a laying diet to 5%. Dr. Snyder said the firm now has eight pens of birds under study in which 5% calcium is being compared against 2.5% calcium. "The 5% calcium birds are producing fully as well as the birds on the lower calcium level," he said. "Preliminary results indicate, however, that feed conversions may be made poorer through the use of high calcium levels."

Environmental Factors

Beacon continues to test different types of poultry equipment and environmental factors which may play an important role in securing optimum egg production. For instance, recent test data indicates, Dr. Snyder reported, that the conventional 14-hour day is fully as satisfactory as lengthening the lighting day concurrent with the progressing laying year.

Beacon is studying also the effect of the presence of cockerels on egg production. Dr. Snyder said layers in pens with cockerels are producing "fully as well" as those in pens without cockerels.

Slat vs. conventional floors are being evaluated by Beacon researchers. Dr. Snyder reported that in a test now under way, Beacon is comparing birds on litter floors, with 3 sq. ft. of floor space, against birds on slat floors, with 1½ sq. ft. of floor space.

"Adequate Replications"

Telling about Beacon's feed research program, Dr. Snyder commented, "For feed people to do a really effective job in their field of applied research, they must follow certain sound principles in their conduct of research. One sound principle is that of having adequate replications.

"For economy reasons, most well-informed poultry investigators will elect to use small pens, with more replicates, rather than use large pens with only a few replicates."

What has Beacon done in this respect? Dr. Snyder gave this example: "Where we initially had two pens of 600 birds each, we now have 20 pens of 45 birds each. This means that in one year we can turn out four times the effective research work that it previously took us two years to do.

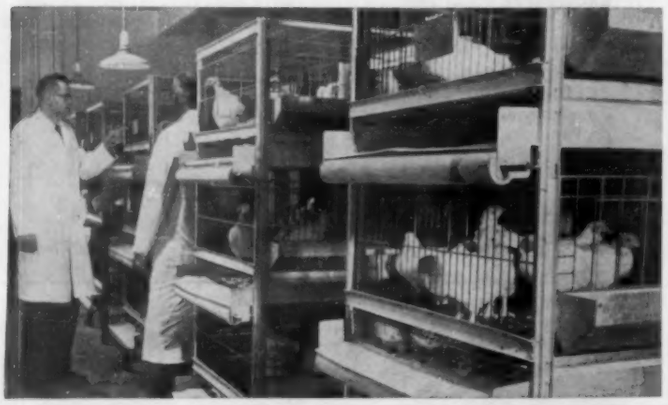
"In addition to more adequate replications, we believe that in the future, feed research people will resort more and more to factorially designed experiments. This is necessary if we are to study the multiplicity of interactions."

He said that because field testing has "the big 'why' loophole," laboratory research must be relied upon to give "truly meaningful answers."

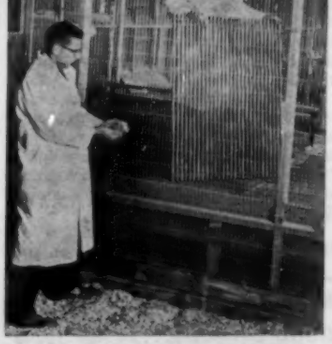
And because feed manufacturing is a low margin business, Dr. Snyder is convinced that for a feed company to support "a really adequate research

POULTRY RESEARCHERS—In aisle of new unit at Beacon Milling Co.'s new experimental unit are, left to right: O. A. Rowoth, assistant director of poultry research; Dr. J. M. Snyder, director of poultry research; S. W. Hamilton, Dr. J. C. Scholes and R. I. Millar, poultry specialists.

BREEDER BIRDS—This is view of single pen of broiler breeder birds in new experimental house at Beacon poultry research farm near Cayuga, N.Y. Each of 32 such pens house 40 heavy breeders. To the rear (top of picture) is controlled pressure ventilation duct. Two such tubes run lengthwise in the 140-ft. building.



BATTERY UNIT—Dr. J. M. Snyder (left), director of poultry research, discusses tests with R. I. Millar, poultry specialist, among 90 test pens which house broilers from 4 to 8 weeks of age. Pilot feeding tests are conducted here.



PREPARING FOR NEW TEST — Poultry researchers get set for new test which will involve a comparison of layers kept on litter and layers on slat floors. Three square feet of floor space will be allowed for birds on litter floors, 1½ sq. ft. for birds on slat floors. R. I. Millar (left), poultry specialist, holds sample of "Stazdry" litter, while Dr. J. M. Snyder, director of Beacon poultry research, shows slats.

WINDOWLESS LAYING HOUSE—This modern experimental unit contains 32 pens for layers. It is fully insulated and has a pressure ventilation system. Exits for the ventilation system may be seen at the top of the wall to the left of the picture. Dimensions of the building are 140 by 36 ft.

program," it must have high volume tonnage. "Overhead must be kept to an absolute minimum," he said. "In our case, the research cost per bag of feed sold is only 2¢."

BROILER RESEARCH — Beacon broiler research was described by Olin A. Rowoth, assistant director of poultry research, who pointed out the mill's early experiences with coccidiostats. During the past decade the research program has included antibiotics for growth promotion, stabilized animal fat, dehulled soybean oil meal, antioxidants and vitamin E supplement.

"In the past five years there has been a very rapid application of nutritional findings in commercial broiler rations," Mr. Rowoth said. "In 1955 research with Vantress White Cross broilers we averaged 3.27 lb. with feed efficiency of 2.55 at 9 weeks and 5 days of age. Our latest tests this year find the average weight of floor broilers at 8 weeks and 6 days at 3.75 lb., with a feed efficiency of 2.19."

Mr. Rowoth enumerated several things Beacon has done to bring about these improvements:

In 1956, Beacon began using "soluble growth stimulants" to replace milk products and to partially replace fish and animal protein products.

"Today there is a widespread usage of fermentation products throughout the feed manufacturing industry," he noted.

And, early Beacon studies showed that adding supplemental zinc to diets of broilers kept in batteries improved nutrition.

Also, decreases in the price of methionine during recent years have made it possible to use this amino acid to economic advantage in certain formulations.

Mr. Rowoth noted that in work with "balanced" protein the crude protein level has been reduced and amino acid composition has been adjusted by adding the limiting amino acids. He noted that, for example, through proper methionine supplementation, comparable growth and feed efficiency can be obtained by reducing the crude protein level of a starter broiler from 23% to approximately 21%. "However," he added, "under present economic conditions, it is not economical to do so."

Along with work on "balanced" protein, the researchers have been working with all-vegetable protein diets. In general, results indicate that the conventional diet will produce broilers .05-.1 lb. heavier than broilers fed an all-vegetable protein diet. Mr. Rowoth said the feed efficiency with the two types of diets is comparable.

Current Beacon broiler research involving unidentified growth factor sources indicates that, under battery conditions, there is little or no response, Mr. Rowoth said. However, with floor birds, Beacon has obtained an economical response with certain UGF sources.

"With the recent announcement by Dr. J. R. Couch, Texas A&M, of the discovery of a new vitamin concentrated from UGF sources, it would appear that if and when this vitamin is synthesized and produced economically, the need for UGF sources may be eliminated," Mr. Rowoth observed.

"In our research work we have obtained no results suggesting the need of supplemental selenium, molybdenum, bromine or potassium in practical diets," he said.

Mr. Rowoth indicated that Beacon researchers anticipate further refinements in the nutrient concept of formulation. "New ingredients, if they prove to be economical, will become widely available," he said. "For example, research work at Cornell has shown good results with toasted unextracted soybean meal (under certain conditions of processing). But at the present time the economics are not in favor of the use of this ingredient."

REPLACEMENT BIRDS — Research with replacement birds was summarized by Mr. Millar. Development of the medium-calorie diet for broiler breeder replacements, comparison of mash-grain feeding systems with all-mash systems and comparison of confinement rearing with range-rearing were summarized.

Mr. Millar recalled that Beacon Milling Co. in 1957 introduced Be-Co Grower, a special formulation de-

AISLE VIEW OF BROILER HOUSE—Joseph Presto, research farm manager, enters one of 16 experimental pens in broiler house at Beacon poultry research farm. Tests are comprised of not more than four variables so that each variable can be replicated four times. Each pen has capacity for 250 broilers.

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signed to keep replacement birds from getting too fat.

"The Be-Co built-in restriction diets proved highly successful," he said. "Many other feed companies followed Beacon's leadership and introduced similar-type diets within a year or two. Unfortunately, some companies went too far in bulking out their diets, with the results that some highly inefficient rations were placed in the hands of poultrymen.

"Beacon's research had revealed the medium-calorie diet to be the best approach," Mr. Millar continued. "Using the Be-Co feeds, it was possible to bring the birds into production in better physical condition."

Early in the 1950's, before the introduction of Be-Co feeds, the company started work on a program for the development of special all-mash rations for heavy broiler breeder birds. During that period the industry generally had gone to "high energy" diets for layers.

Then, in 1959, after introducing special medium-energy diets for broiler breeders through Be-Co feeds, the company developed a layer feed designed for the medium-speed egg producer or to be used under conditions where management, rather than feed or strain of bird, might limit production rates.

Mr. Millar reported that "excellent" pullets have been raised on both grain-and-mash and on all-mash feeding programs, and "tests reveal no significant differences in the egg production results of the mature birds."

According to results of a Beacon 2-3 factorial design experiment with growing pullets, an all-vegetable ration is capable of producing satisfactory birds.

Other research carried out with "hold-back" rations has shown that the maturity of a growing pullet can be delayed up to two weeks without stunting the bird's growth.

TURKEY STUDIES — The improved performance of turkey feeds was pointed out by S. W. Hamilton, Beacon poultry specialist. In 1935 the required feed conversion was 8 lb. for a live weight of 14.50 lb. in 30 weeks. The latest estimate is 3.40 lb. for a U.S. average live weight of 17.25 lb. in 22 weeks, Mr. Hamilton said.

Much of Beacon's turkey research has been centered on rate of growth, economy of production, marketing advantages and sex influence when growing hens and toms separately. "We have found that the protein level of diets with a properly-balanced protein can be reduced and still maintain original effectiveness," Mr. Hamilton added. "This can be done in part by supplying adequate amounts of methionine."

Mr. Hamilton said the influence of unidentified factors has played an important part in Beacon turkey research projects. "We have successfully and economically grown turkeys to 23 weeks of age on diets devoid of all unidentified growth factors, except the alfalfa factor," he reported.

As a result of its own nutritional studies, Beacon has put into commercial use new turkey starting, breeding, growing and finishing feeds. "We have revised our feeding schedules," Mr. Hamilton noted. "They are timed to better meet the nutritional requirements according to age. For example, within the past two years, five additional turkey feeds have been added to our lineup in the Shenandoah Valley area—making for a total of 10 different turkey feeds."

Mr. Hamilton listed the following nutritional advancements expected in the future: (1) Increasing use of complete turkey diets, (2) more concentration on improved finisher diets for turkeys of younger age, (3) growing feeds which can be formulated according to particular environmental requirements or conditions, (4) controlled feeding or restricted caloric intake, (5) hens and toms fed separately according to their particular nutritive requirements, (6) improved medications for coccidiosis, blackhead, sinusitis, hepatitis and (7) use of tranquilizers for aortic rupture.

DUCK RESEARCH — With one branch plant located on Long Island, Beacon has been associated with the commercial duck industry for many years, Dr. John C. Scholes, poultry specialist, said. Assisting in the development of an inoculant for duck virus hepatitis, investigations of the problems of salt in water on coastal duck farms and a program of breeder selection for growers, have been Beacon projects over the past 20 years. Dr. Scholes noted the more decentralization of duck farming, as opposed to integration which was predominant in the industry until a few years ago. There are now many breeder farms with large hatcheries and other farms do nothing but grow ducks. It appears that specialization in the duck business will continue, he stated.

Feeding trials with market ducks at the Beacon poultry research farm have covered many phases of feeding and management problems. Some of the observations that have come out of these studies have to do with the differences in nutritional needs which exist between the duckling and the chicken.

Penicillin fed at low levels, shown to have growth promoting value for chickens, has shown no value for ducklings in Beacon tests. Beacon work with arsonic compounds in feeds for ducklings has demonstrated that arsanilic acid has perhaps a slight depressing effect and is relatively non-toxic for ducklings. On the other hand, Dr. Scholes noted, 3-nitro-4-hydroxyphenylarsonic acid has stimulating properties but is highly

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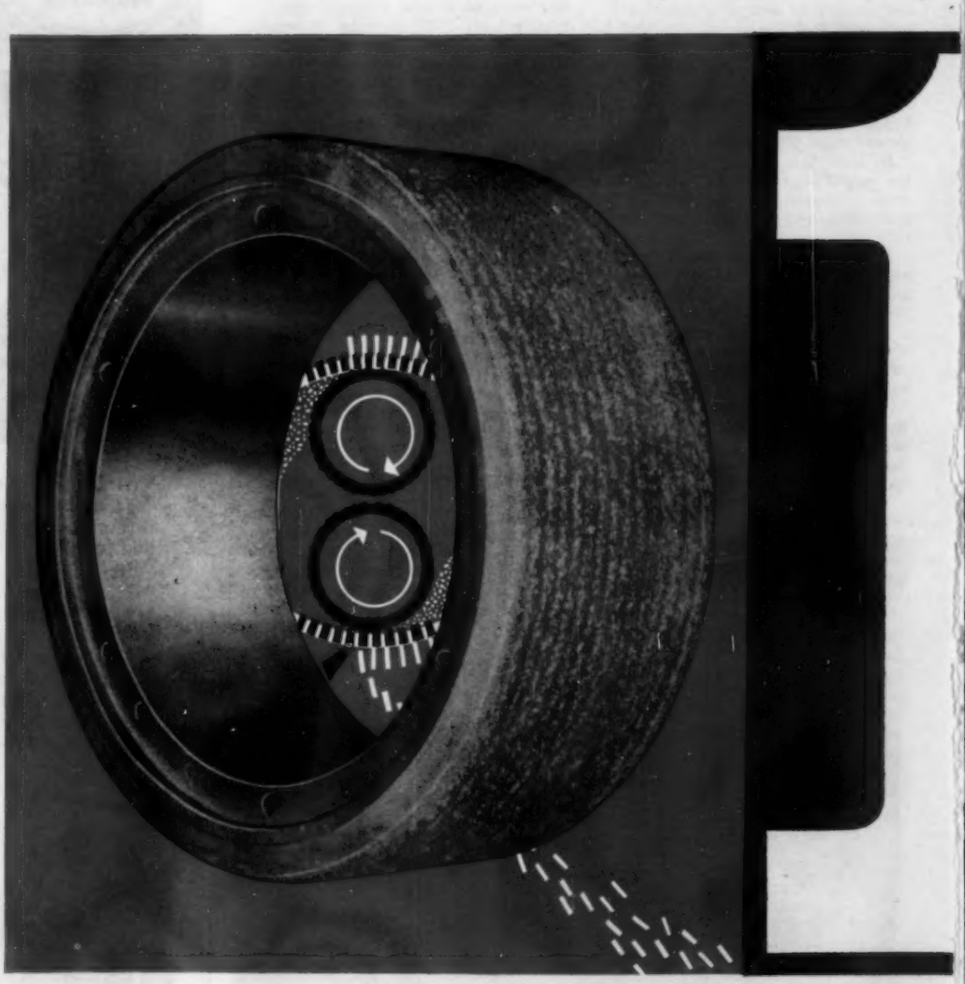

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toxic for ducklings, particularly for ducklings brooded in a cool environment.

Avoid Duplicate Research

"In our research work we try to avoid conducting fundamental research which might duplicate that being done at state and federal institutions," P. E. Newman, executive vice president of Beacon said in summary. "Particular stress is placed on finding out how to put fundamental research into practical use in the best and most efficient manner."

Dr. Newman said the role of Beacon research and that of others in the feed industry consists of two equally important parts: (1) The actual development of new ideas and improved methods and (2) getting these developments into a feed bag and into feeding programs in an economical, practical manner so they will be used quickly and widely by producers.

"We believe Beacon is in the top five or six formula feed companies with respect to research facilities, staff and total attention given to research," he said. "In terms of effective poultry research, we believe we are even nearer the top."

The Beacon poultry research farm covers an area of approximately 60 acres. There are nine permanent buildings and accessory units with an operating capacity of about 16,000 birds. Layers and/or breeders account for about 4,700 birds; broilers and/or heavy meat birds, 6,575; replacement birds, 3,100; turkeys, 1,200, and ducks, 300.

The poultry research farm serves a dual role as a research and demonstration unit, Beacon officials reported. And the primary objective of the research conducted at the farm is to improve Beacon feeds and feeding programs for all classes of poultry.

69 NEW MEMBERS

DES MOINES, IOWA—Officers of the Western Grain & Feed Assn. of Iowa announced the recent enrollment of 69 new members.

Good S. C. Turkey Business Predicted

SUMTER, S.C.—Turkey producers attending a meeting of the South Carolina Turkey Federation in Sumter were told by Henry Simons, Jr., prominent banker and agriculturalist in Charlotte, that "the only limiting factor in our future in the turkey business is our own imagination."

Citing some of the problems facing farmers in the Midwest and West Coast areas, which lead the nation in turkey production, the agricultural manager of Charlotte's Wachovia Bank & Trust Co. considers the Carolinas an ideal area for turkey production.

"Our land, our labor and our housing expenses are considerably lower than those of the Midwest and West Coast," he explained. "We are half again closer to large eastern markets than is the midwestern producer; the sky's the limit if we will only improve our management and take advantage of our advantages."

Mr. Simons reminded the group that "most of our growth in the turkey business took place during a period of abnormally high prices. When normal times returned, the contrast made the turkey business look disastrous to producers, to credit agencies and to the general public. The efficient producer went right along making a good living, though, just as he has always done. Many credit agencies are still not aware of the many changes which have taken place."

In reviewing some research done by a co-worker, Mr. Simons pointed out that no banker who had financed turkeys reported them to be a poor risk in questionnaires sent out. Many bankers who had had no experience with them have reported that they were afraid of financing turkey production. This was brought out to point up the lack of up-to-date knowledge of the industry among the general public.

A discussion on a proposed change in the method of collecting funds resulted in Calvin Rivers, president of the federation, naming a committee to study the situation. It was decided to meet again Nov. 30.

30th Year in Office

WASHINGTON—Abraham H. Winkelstein, chief of patent examining division 63, is celebrating his 30th year in office this month.

More than 75 patent attorneys from various parts of the country who have served as examiners under Mr. Winkelstein during that time have sent congratulatory wires and messages, and many assembled with patent office officials recently to offer their congratulations and express their esteem for him.

Division 63, one of the chemical divisions in the patent office, was formed when Mr. Winkelstein became chief. Under his guidance and administration, numerous patents in the field of organic chemistry, fermentation, foods and beverages have been issued.

NEW MANAGER NAMED

SCOBEY, MONT.—Rudolph Lee, former manager of the Victoria elevator in Scobey, has accepted a position as manager of the Nash Bros. Feed & Grain Co. Mr. Lee is succeeded at the Victoria elevator by Rex Ferguson, Selby, S.D.

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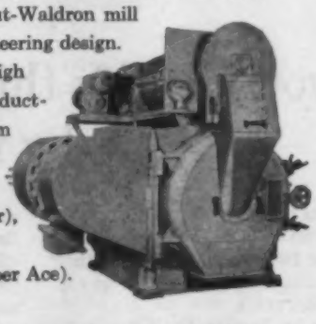
In test after test, Sprout-Waldron pellet mills have out-produced in tons per horsepower every competitive mill on the market! Whether your needs be for the Junior, the Ace® or the Super Ace® you can rely on the Sprout-Waldron mill for the latest in engineering design. This means uniform high quality, maximum production rates and minimum operating costs. For details request Bulletin 165-A (Junior), Bulletin 100-A (Ace) and Bulletin 201 (Super Ace).



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Blatchford's

FEED CONTROL COMMENT

By BRUCE POUNDSTONE
Secretary, Association of American Feed Control Officials
Kentucky Agricultural Experiment Station, Lexington

Change in California Pet Food Labeling

The expression "Analysis by Methods of A.O.A.C." on pet food labels no longer appears in regulations promulgated by the Bureau of Food and Drug Inspection, Cannery Inspection Section, and approved by the California Board of Health. This is welcome news.

Control officials generally object to any reference to an official agency on a label, such as the A.O.A.C. and the Associaton of American Feed Control Officials.

Recently a label proposal included: "The fluorine content does not exceed the tolerance established by the Association of American Feed Control Officials." A guarantee for maximum fluorine is all that is required.

References to companies other than the manufacturer on a label are likewise objected to. A feed mixer recently proposed as a part of a label: "Formulated by ....," the name of the company supplying the formula appearing in the blank. An alternative proposal, "formula furnished by ....," is equally objectionable.

Reference to the name of a manufacturer of a supplement used in a mixed feed falls in the same category. The concept adopted here by feed officials was summed up some years ago by a prominent nutritionist when he said that a product should stand on its own merits without reference to statements designed to give support from the "outside." A man who manufactures and guarantees the product must assume full responsibility for the feed. The merits of the feed must rest upon the results in the poultry house, not in label claims.

◆

Another Permit Number To Be Dropped

Georgia will not require "Georgia Permit Number ...." on tags after Jan. 1, 1961. Also, all feed manufacturers distributing feed in Georgia will be required to go on the reporting system, thus doing away entirely with feed inspection stamps. This, according to F. S. Carr, chief, food and feed section, Georgia Department of Agriculture, is the result of an amendment to the Georgia Feed Law passed by the 1960 Georgia General Assembly.

◆

Drug Claims

Careful review of proposed labels for feeds containing drugs sometimes reveals claims not found among statements which primary drug manufacturers had submitted as having been cleared with the Food and Drug Administration. Drug levels may be too low or too high, or a claim may be made that is entirely unwarranted. Users are advised to adhere closely to the claims supplied through the cards described in Feed Control Comment as published in the March 19, 1960, issue of Feedstuffs.

Feeding directions are likewise of vital importance. It is for this reason that over two pages, beginning on page 24, of the 1960 annual publication of the Association of American Feed Control Officials are devoted to this subject.

Mixing directions for supplements or premixes containing drugs also should be carefully stated on labels. Feed manufacturers should observe these suggestions made by primary drug manufacturers on all of these points.

The only possible exception to the above would be the labeling of products for sale through veterinarians sold on prescription. Even here directions on the label are desirable.

◆

Screenings Meal Or Ground Screenings

"Ground screenings" has been suggested as an appropriate term for a product proposed by a feed mixer as "Soybean Screenings Meal." Another suggestion would be "Ground Screenings from Soybeans." Such a product should conform to definition 183 on page 54 of the 1960 annual publication.

This illustrates how a term is coined in accord with association policy. Consult your copy of this handbook or write to your feed official if questions arise.

FEED FIRM REMODELED

ALGONA, IOWA—Algona Flour & Feed is nearing the end of a complete remodeling and redecorating job.

can you identify this grain insect by its silhouette?

You've probably already guessed it's a saw-toothed grain beetle. Diamond Premium Brand Grain Fumigant "A" kills it fast . . . with certainty . . . at low cost.

It's fast because it quickly forms a heavy vapor that penetrates to remotest corners, fills every air pocket, blankets every kernel of binned grain.

It's certain because the vapor mixture has 100% active ingredients that kill adults, larvae and eggs, from top to bottom of bin.

Costs less because less gallonage is required per bin.

Safer, too, because it is nonexplosive and has no flash point. Premium Brand Grain Fumigant "A" has no effect on viability of seed grain . . . leaves no odor on grain, no taste, no unpleasant residue.

Details on request. Diamond Alkali Company, 300 Union Commerce Building, Cleveland 14, Ohio.

Diamond Chemicals

Animal Nutrition and Feed Production Consultant
C. W. SIEVERT
Room 858—141 W. Jackson Blvd.
Phone Webster 9-3256 Chicago 4, Ill.

THE 3 PURITANS

The Three Puritans symbolize the three CCC quarries—in Quincy, Illinois, Carthage, Missouri and Weeping Water, Nebraska—so called because of the high purity of the deposits.

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"You're beautiful because your colors are bright —and you're so loaded with that certain perfection Chase always gives!" "That certain perfection" is really a host of little details that Chase never overlooks. For instance, every Chase plant employs an "Ink Man," just to keep constant watch over hundreds of different hues, and to help Chase's skilled color-printing craftsmen put them to the very best use. All this so your products go to market in the most inviting way possible! As for *economy* and *utility*...these are an integral part of every Chase Bag. For facts about bags for any purpose, call your Chase Man, or write us.

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32 plants and sales offices coast to coast

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MINNEAPOLIS, MINN.

CHICKEN FOR EUROPE—Chicken is being loaded on the British ship Tern at Richmond, Va., to be shipped to Hamburg and Rotterdam ports. About half of the 1,202,880-lb. shipment was destined for the Ruhr steel district of Germany where 8-9 million people are concentrated in a radius of 25-35 miles. The shipment included 210 tons of whole chicken, 100 tons of chicken parts, 137 tons of livers and 90 tons of fowl. Virginia firms participating in the shipment were the Rockingham Poultry Marketing Cooperative, Harrisonburg, and Holzgrefe & Plageman, Glen Allen. Others were Priebe & Sons, Concord and Raeford, N.C.; Cagle's, Inc., Atlanta, and Hormel Co. Some of the poultry originated in Arkansas, Minnesota and Nebraska.

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DIVISION
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Accountants Attend Spring Meeting

KANSAS CITY — The Flour Mill and Grain Accountants Assn.'s regular spring meeting was held in the recreation room of The American Flours Co., Newton, Kansas, April 22. There was a good turn-out for the meeting prepared by Harry C. Schierling of Hunter Milling Co., Wellington, and by Milo Straney of Ross Industries, Inc., Newton.

Principal speakers were: Murray Ross, president, Ross Industries, Inc.; Al Schul, accounting department of the Southwestern Bell Telephone Co., Wichita; Prof. Ben Bargen, professor of accounting, Bethel College, Newton, and W. W. Carr, accountant, Intermountain Elevator Co., Denver.

New officers elected were: President, Dwight Burton, Farmers Cooperative Commission Co., Wichita; vice president, Warren Reppert, Dannen Mills, Inc., St. Joseph; secretary-treasurer, Leslie Voth, Buhler (Kansas) Mills, Inc.

The next meeting will be held Oct. 21 at a place to be announced later.

Feeder Cattle Prices Lower Than Last Year

BLACKSBURG, VA. — Prices at spring feeder sales in Virginia ranged from $3 to $4 cwt. under last year's figures, according to K. C. Williamson, beef cattle specialist at Virginia Polytechnic Institute.

"Prices for the various weights indicated that cattle feeders are more optimistic about the immediate future of fat cattle prices, while those buying cattle to go on grass and longer feeding periods were showing more caution than they did last year," he said.

Buyers were present at all the sales, looking for herd building and replacement heifers, Mr. Williamson noted, but most of the heifer calves sold went for feeding purposes.

Buyers were putting more emphasis on quality than usual at spring sales, with $1 cwt. difference in price between good and choice calves. Medium calves averaged about $1.50 under the good calves.

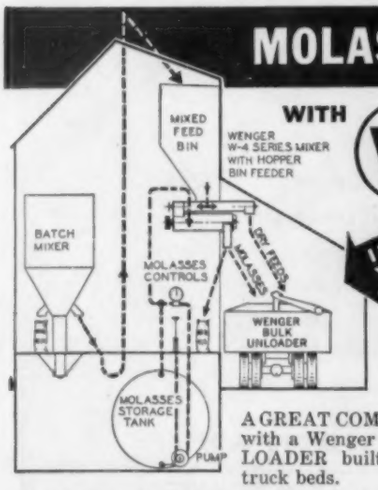
Retires From USDA

WASHINGTON — A. S. Sneby, one of the U.S. Department of Agriculture's market news pioneers, has retired as chief of the livestock market news branch, Agricultural Marketing Service. He helped initiate the first USDA livestock market report issued from Chicago in 1918.

Note 75th Anniversary

BALTIMORE, MD.—T. M. Dinsmore & Co., Inc., is celebrating its 75th anniversary during 1960. The company has served the feed industry continuously since 1885.

MOLASSES MEAL FEEDS IN BULK



WITH WENGER W-4 SERIES MIXER WITH HOPPER BIN FEEDER

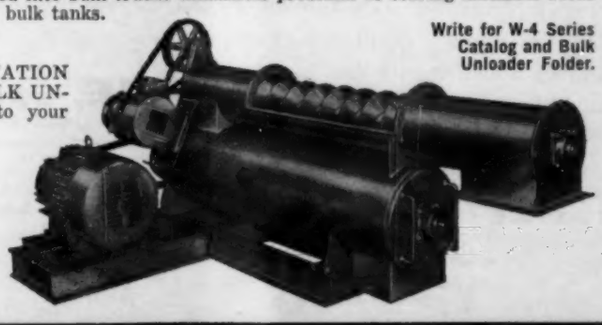
Wenger W-4-72 SERIES Molasses Feed Mixer

INSTALLED OVER YOUR DRIVEWAY

Apply molasses to meal feeds as feeds are loaded into bulk trucks, or convey back inside of feed mill for molasses feeds to be delivered in bags. Application of molasses just as feeds are delivered into bulk trucks eliminates problems of storing molasses feeds in bulk tanks.

Write for W-4 Series Catalog and Bulk Unloader Folder.

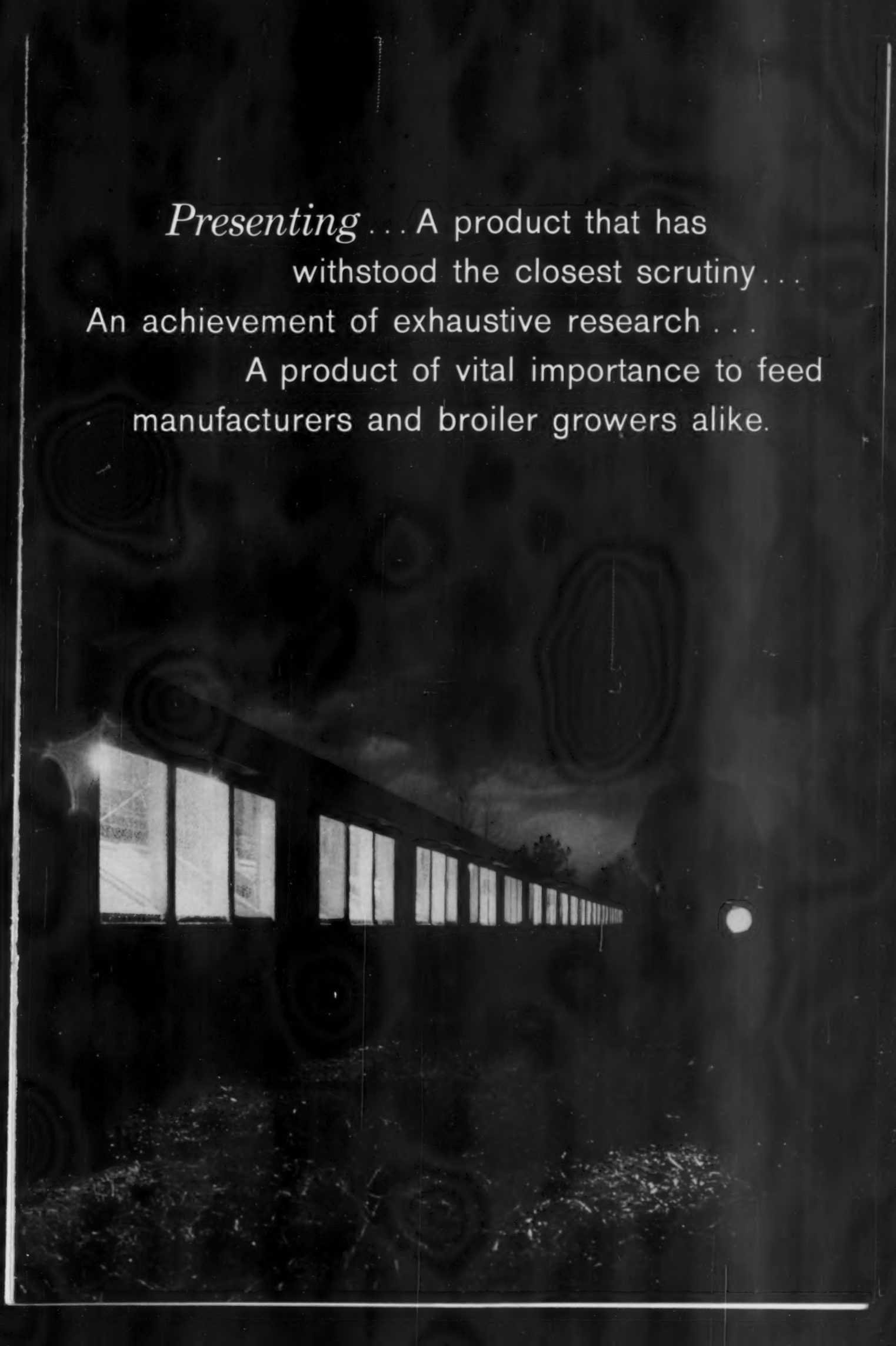
A GREAT COMBINATION with a Wenger BULK UNLOADER built into your truck beds.



ABOVE — W-4-72 Series Hopper Bin model with reversible feeder may deliver mixed feeds to the molasses mixer, or into bulk trucks directly for those feeds to be delivered in meal form without molasses. Models available from 3 tons to 40 tons per hour.

Wenger Mixer Manufacturing
SABETHA, KANSAS • PHONE 111
Standard of the Industry for Liquid Feed Mixing, Pelleting and Cooling Equipment.

AA Arbor Acres
Make sure
Your broilers come from ARBOR ACRES females!


Presenting . . . A product that has
withstood the closest scrutiny . . .
An achievement of exhaustive research . . .
A product of vital importance to feed
manufacturers and broiler growers alike.

Announcing

ZO

thoroughly tested coccidiostat

Zoamix is the result of one of the most complete researching jobs ever conducted in the poultry industry! Fourteen years, and 150,000 man-hours ago, Dow researchers began their search for a coccidiostat that offered the best possible protection . . . the utmost safety to animals and humans . . . the least interference with the nutritive requirements of the bird. They investigated and discarded some 13,000 compounds until they discovered 3, 5-dinitro-o-toluamide . . . the name for the chemical in Zoamix. Since then they have discarded another 10,000 compounds as inactive or inferior. Then, before it was marketed in the U. S., Zoamix was tested on 70-million birds under every possible growing condition . . . field-tested by many major feed manufacturers and colleges . . . and used internationally for over a year and a half—making it one of the most widely sampled and examined products of its kind. The results of these tests were amazing!

In Canada, for example, Zoamix has become so popular and successful that *four out of every five commercially grown birds on a coccidiostat are fed Zoamix!* In this country, the announcement of Zoamix comes at a time when agricultural chemicals as a whole are being closely examined for any possible hazard to consumers. It is approved for feeding young chickens right up to market time!

best possible protection . . . greater feed efficiency . . . greater weight gains

Tests comparing coccidiosis control with nine other coccidiostats show Zoamix (containing Zoalene) more effective than eight, equally effective as the other, but superior to all in combining protection, feed conversion, weight gains and certain safety benefits.

Comparative tests (shown at right) with other coccidiostats illustrate the Zoamix superiority in producing better gain and feed conversion. On 10,000-bird flocks the extra profit can amount to $250.00 —often much more.

RATE OF GAIN AND FEED CONVERSION COMPARISONS

Zoalene Compared with Following Coccidiostats		A	B	C	D	E	F	Totals
Number of Comparative Tests		29	15	16	23	5	6	94
NUMBER OF TESTS IN WHICH:	Zoalene Superior for Weight Gains	28	14	16	14	5	6	83
	Other Coccidiostat Superior for Weight Gains	1	1	0	8	0	0	10
	No Difference in Weight Gains	0	0	0	1	0	0	1
	Zoalene Superior for Feed Conversion	26	10	14	15	2	6	73
	Other Coccidiostat Superior for Feed Conversion	1	2	2	7	2	0	14
	No Difference in Feed Conversion	2	3	0	1	1	0	7

safer to use

The safety benefits of Zoamix make it the most reliable coccidiostat on the market today!

1. **It's safe** to switch from another coccidiostat to Zoamix—without a setback in the bird's growth!

2. **It's safe**—feeds won't cause physical injury if mistakenly fed to other farm animals—ducks, turkeys, geese, hogs, sheep, cattle, dogs! (But remember, Zoamix is recommended only for growing chickens.)

3. **It's safe** when mixed with all other commonly used feed ingredients and additives in your chicken feed formula. Zoamix is completely compatible and doesn't alter feed nutritive requirements!

4. **It's safe** to handle! No danger to mill workers or consumers of Zoamix fed birds.

5. **It's safe** to feed to broilers right up to market time. Grower can raise birds on one feed formula and market them at the best time—without withdrawing coccidiostat prior to delivery!

6. **It's safe** for broilers. Zoamix results in no change in hematology, organ weights or histology; and it will not impart an "off" flavor to the meat!

easier to handle and assay!

Assaying for Zoamix is simple, speedy and accurate with spectrophotometric method—far faster than tests required for other coccidiostats. **Handling.** Zoamix is designed for ease of handling in the feed mill—free from dust and free flowing. Under storage it will not cake. Stored at room temperature for fourteen months, and subjected to violent and sudden temperature differences, feed containing Zoamix remained as potent as when freshly mixed. In addition, Zoamix can be pelleted and re-pelleted without loss of potency.

DOW®

ZOAMIX®

the new standard of efficiency in coccidiosis control with definite safety benefits!

See for yourself! Compare Zoamix point for point with any other coccidiostat. You'll find none can match this combination of benefits: (1) The best possible protection... (2) Allows maximum feed efficiency and (3) maximum weight gains... (4) Safety... (5) Ease of handling and assaying.

ZOAMIX IS AVAILABLE NOW

—warehoused in several centrally located cities. For assistance in registering your formula, or additional help and technical service, write:

THE DOW CHEMICAL COMPANY
Agricultural Chemicals Sales Department, Midland, Michigan

DOW®

A DYNAMIC NEW FORCE IN THE FEED INDUSTRY FIELD

Adding to its reputation as a major manufacturer of agricultural chemicals, The Dow Chemical Company is devoting a continuous research and development program to help growers and ranchers raise more productive . . . more profitable livestock.

Dow, with its large research and development staff, nation-wide facilities, and extensive resources devoted to the agricultural field, continues to probe deeply and thoroughly into the modern chemical approach to animal health.

As evidenced by the several million dollars and many years' study of coccidiosis and chemicals that produced Zoamix, Dow's future role in animal health products will be an important one. As for past accomplishments, these Dow products have shown a new way to healthier, more profitable poultry and livestock:

DOWZENE® DHC
Dow piperazine dihydrochloride for effective, safe, one-day worming of dogs, swine and poultry.

DL-METHIONINE
One of the most effective amino acids for the efficient production of healthy, fast-feathering birds.

TROLENE®
The first systemic insecticide ever developed for preventing grub damage and market dockage in cattle.

KORLAN®
Insecticides for controlling livestock pests. For direct or residual spraying, or as a smear or dip to control a variety of external insects.

THE DOW CHEMICAL COMPANY • Midland, Michigan

Arizona Cattle Feeders Day Set

TUCSON, ARIZ.—Plans have been completed for the first annual Cattle Feeders Day program to be put on by the University of Arizona department of animal science May 21 at the department's farms.

A heavy program of seven afternoon talks has been arranged, with subject matter covering a variety of research conducted at the school. Among the subjects will be a look into what's next in beef cattle nutrition, new feed additives, and implants.

Opening it up will be Dr. William H. Hale, Chas. Pfizer & Co., Inc., Terre Haute, Ind., speaking on "What's Next in Beef Cattle Nutrition?" Dr. F. E. Hubbert will follow with an address on "Low Fiber vs. High Fiber Alfalfa Hay for Summer Feeding." Dr. B. R. Taylor will talk on "Two Years' Work with Range Implants," just prior to a break.

Dr. Hubbert will give another talk just after the break, "Calcium: Fat Relationship in the Fattening Ration." Dr. C. B. Roubicek will follow with a talk on "New Feed Additives—Enzymes and Implants."

Closing out the program will be three talks. Tom Anderson will speak on "Digestion Trials With Low-Quality Roughages," Dr. O. F. Pahnish will give a "Progress Report from San Carlos" and Dr. Taylor, Dr. Hubbert and Dr. Roubicek will tell of "Plans for Summer Trials."

The morning will be devoted mostly to registration, inspection of cattle and touring of facilities, with two research reports given also.

The day will open at the Casa Grande Highway Farm with registration and inspection of experimental cattle, rations, pens and feed mill equipment. Experimental cattle will be appraised by the Arizona Cattle Assn. committee.

This will be followed by two research reports. Dr. Taylor will report on "Steam-Rolled vs. Dry-Rolled Milo and Barley," and Dr. Hubbert on "Level of Protein and Protein:Phosphorus Ratios."

Just prior to lunch, registrants will tour the Campbell Avenue Farm, inspecting the registered Hereford and Angus cattle and have a look at the digestion trials equipment for steers. The nutrition laboratory and meats laboratory also will be open for visitors.

Fish Meal Firm Aims At Diversified Output

PROVIDENCE, R.I. — Aiming at diversified output rather than increased production, the Point Judith Dehydrating Process Co. plans to build a second plant for the production of dried fish meal at Galilee and will reopen its existing plant there June 1, a month earlier than had been expected.

John W. Ryan, company vice president, said contracts are being prepared for the construction of a 50-by-100-ft. structure. The new plant may be built this summer.

Mr. Ryan said there are no present plans to increase the company's work force.

The existing plant at Galilee closed Sept. 30 because of a low market for its product, used as a poultry feed supplement. It had been in operation on a year-around basis until the shutdown.

Mr. Ryan said fishermen have accepted new reduced prices of $12 ton for ordinary trash fish and $18 ton for menhaden. The new prices, announced March 26, represent a drop of $6 ton for ordinary fish and $7 a ton for menhaden.

The trash fish plant, which processed a record 88 million pounds of industrial fish, worth nearly $1 million, in the first nine months of last year, is served by a fleet of about 40 fishing draggers which also land edible fish for the Point Judith Fishermens Cooperative. Last winter, fishermen sought to market trash fish catches in other ports without much success, it was reported.

DIVIDEND DECLARED

NEW YORK — Directors of National Distillers & Chemical Corp. have declared a quarterly dividend of 30¢ a share on the corporation's common stock, payable June 1, 1960, to stockholders of record on May 11, 1960. The regular quarterly dividend of $1.06¼ a share on the preferred stock was also declared, payable June 15, 1960, to holders of record May 16, 1960.

NEW IMPROVED SAME LOW PRICE

RYDE'S NUTRITIVE MINERALS

FOR HOGS, POULTRY, CATTLE

Contains cooked and ground egg shells with egg albumen, and all known essential trace mineral elements.

HELPS TO: *Make all feed go farther*

- *Improve general health and appearance*
- *Increase resistance to disease*
- *Improve production*

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SPECIFY Columbia Calcium

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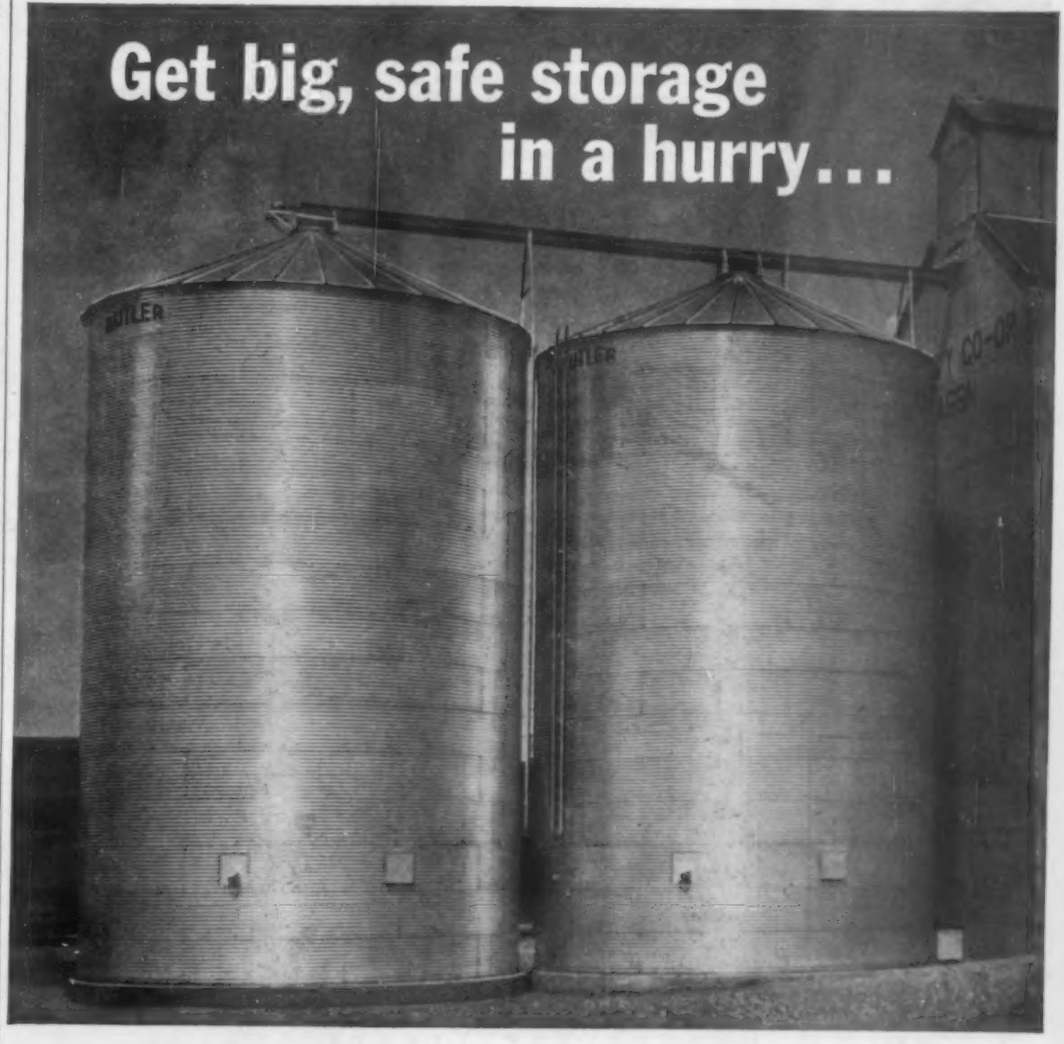

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Versatile Butler Giant Bins make excellent additional storage facilities. Available in sizes holding from 3,600 to 36,400 bushels of grain, these big bins are pre-engineered by Butler to assure fast, bolt-together construction. You save weeks of costly planning and erection time.

Ideal, too, for complete storage and handling facilities, Butler Giant Bins make it easy to segregate, grade and store grain in a low-cost-per-bushel installation. Hotspots can be quickly controlled with modern grain handling equipment. An optional high-level catwalk makes frequent inspection possible.

Tight-fitting bolted steel panels keep grain dry, clean, and firesafe; eliminate weather, insect and rodent damage. Aeration, fumigation and cleaning are easily handled. You get safe, dependable steel storage . . . and Butler brings it to you at low cost per bushel.

Financing is available through your nearby Butler Builder, Dealer or Contractor. See him soon. Or write direct to us.

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New Arkansas Plant Specializes in Efficient Output of Poultry Feed

By ROGER BERGLUND
Feedstuffs Managing Editor

Increasingly, this is the era of specialized feed plants serving nearby areas. And, as in any type of feed business, production efficiency and economy are particularly important these days.

Now serving southwestern Arkansas is a new feed plant of this type. Located at Hope, Ark., it is the plant of Hope Feed Mills, Inc.—a part of Cameron Feed Mills at North Little Rock.

The mill is engaged primarily in the production of commercial poultry feeds for Cameron poultry operations and for other poultry industry customers. However, some cattle cubes also are made at the mill.

MANAGERS—Shown conferring are C. F. Batson (seated), Hope plant manager, and Buford Hall, director of production for Cameron Feed Mills, Inc.

When Cameron officials decided to build at Hope, they were seeking a facility which would provide efficient and economical manufacture and distribution, along with required flexibility. What they now have is a mill which can turn out approximately 100 tons of pellets or mash per eight hours, with a crew of three men handling the unloading, mixing, pelleting and other operations.

Most of the feed goes out in bulk and includes commercial broiler, layer and breeder feeds. Turkey feeds also will be made at Hope.

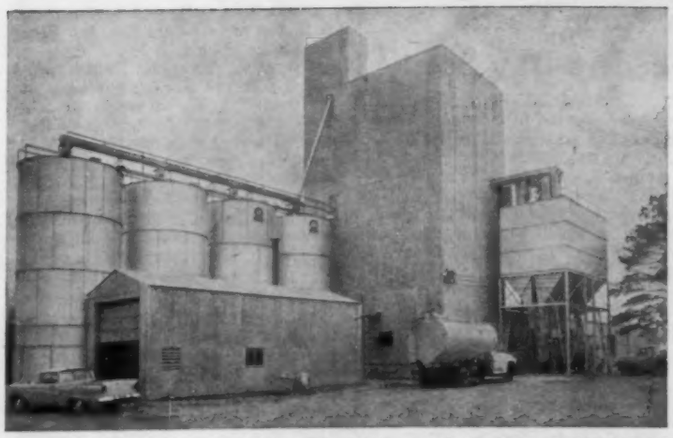
The new mill, which went into production last fall, is one of three mills of the Cameron interest. Others are at company headquarters at North Little Rock and at Nashville, Ark.

Ted Cameron is president of this growing organization. Joe E. Scott, who offices at Hope, is executive vice president, and George E. Tenney is general sales manager. Charles Batson manages the Hope plant. Director of production for the firm is Buford Hall.

Design and engineering of the Hope plant were furnished by Hayes & Stolz Industrial Manufacturing Co. of Fort Worth. This firm also installed the equipment and built the bulk bins. General contractor was Garbi & Joseph Construction Co., Little Rock.

The mill is a manual push-button, batch mixing type of operation. Grain and other major ingredients are received and handled in bulk, and minor ingredients and additives are handled in bags. In addition to the dry ingredients, special facilities are included for handling and adding fat and molasses to feeds.

The entire operation, including materials handling, distribution and processing, is directed from one central point through the system of controls and indicator lights for motors, machinery and bins.



EXTERIOR VIEW—An exterior view of the new plant of Hope (Ark.) Feed Mills, Inc. On the left are grain storage tanks and a building housing the boiler and truck maintenance facilities. To the right of the mill building are the bulk feed bins, above a truck scale. Partially in view in the background is the warehouse for bagged materials.

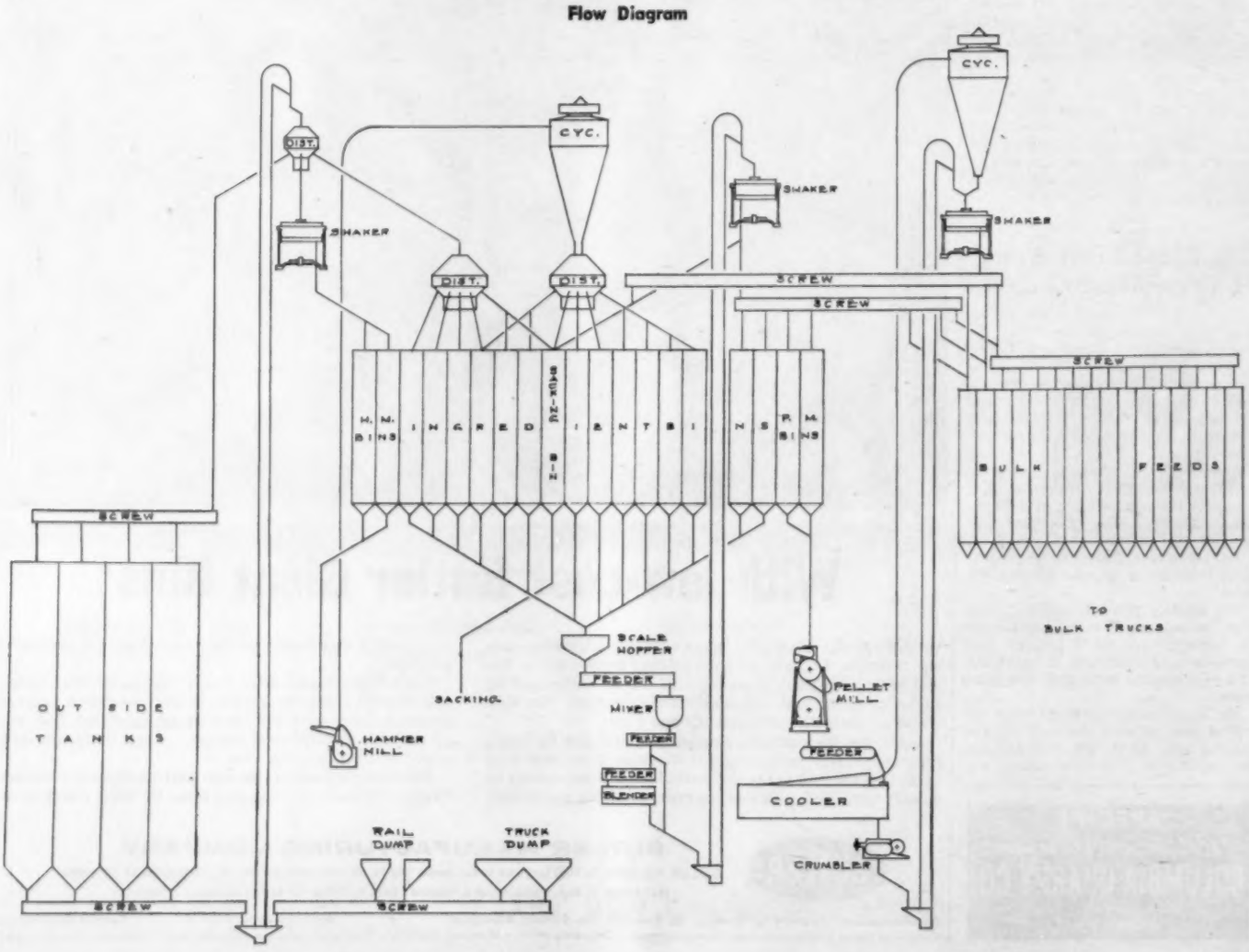
While the plant is currently rated at some 100 tons per day, capacity could readily be stepped up through the addition of another mixer and pellet mill. Space was provided for these additions.

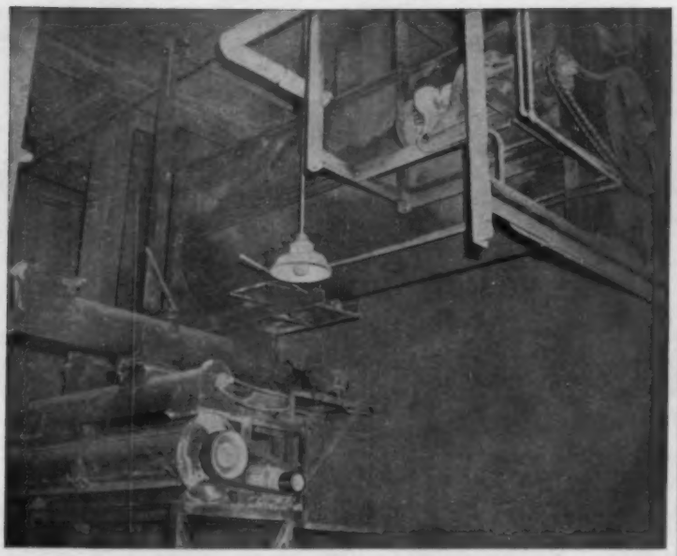
Mill Building

The mill building is a 30 by 40 ft. steel and corrugated iron structure 83 ft. high, with a 20 ft. basement. Adjoining the mill section is a 40 by 160 ft. warehouse for ingredients and finished feed in bags. These are handled with a forklift truck. For outside grain storage there are four 15 by 48 ft. bolted steel tanks with hopper bottoms. In the mill, as shown in the accompanying flow diagram are 19 twenty-ton steel bins. These

GRINDING — A Jacobson hammermill does the grinding at the Hope mill.

Flow Diagram



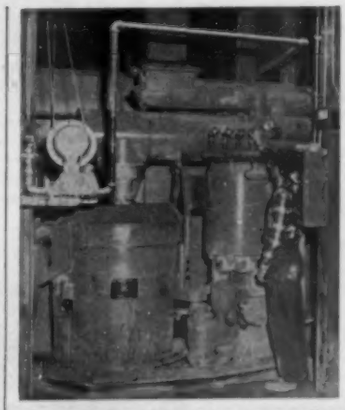


MIXING — A two-ton Hayes & Stolz horizontal batch mixer above a high speed blender in which fat may be added.

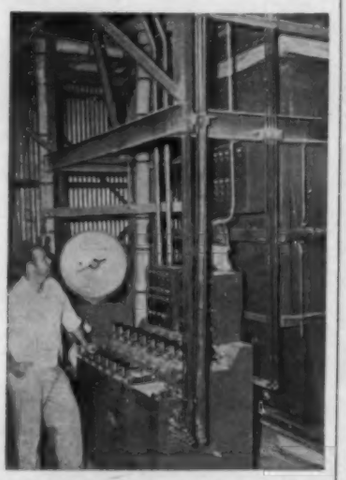
include the grinding, ingredient, sacking and pellet mill bins. Within the warehouse area is the air-conditioned office.

Most of the finished feed goes into 16 bulk bins—four 12-ton and twelve 7-ton bins—over a 10 by 50 ft. Fairbanks-Morse truck scale. Alongside the grain tanks is a building housing the boiler and truck maintenance facilities.

Materials are handled through a system which includes three elevator legs (receiving, mixing and pelleting), remotely controlled distributors and screw and drag-type conveyors.



PELLETING—Pellets are made with a 100 h.p. Heim machine. A two-stage Heim horizontal cooler is used for cooling.



BATCHING—A gravity, air control system is used in batching. To weigh out ingredients, the operator uses levers on a control board to open and close air slide gates. Pictured here are the operator, the control center and part of the batching scale.

Both mash and pellets can be made at the same time, and the finished feed can go either to the sacking bin or to the bulk load-out bins. Scheduling is such that feed can be loaded into bulk trucks at night, and these are then ready to hit the road in the morning. This makes it possible to produce and load out more feed in the day when a full crew is on.

The entire operation, said Mr. Scott, makes for efficient production of the bulk poultry feeds in which the firm specializes. At the same time, flexibility is provided for manu-

PERSONNEL—Office and mill personnel at the Hope plant. The plant manager, C. F. Batson, is second from right, standing.

PACAL *Boralloy-350* STEEL SHEETS

SUPER STRENGTH · LONGER LIFE · LESS WEIGHT

New Boralloy 350 is made with Boron to achieve a Brinnel hardness of 350. It resists corrosion, abrasion and can be cold formed, drilled, and welded as any other steel. Yet Boralloy's superior structural strength make it economical material for almost any milling application and is equally serviceable in both wet and dry use.

Order Pacal Hammermill Hammers. There is one designed to meet your specific job requirements.

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U.S.I. DL-METHIONINE

Modern high-energy feeds need the essential sulfur amino-acid, U.S.I. DL-Methionine. This vital nutrient helps your customers to get more economical production from their poultry and other livestock. You get the top-quality, fully active amino-acid from U.S.I., pioneer producer of methionine.

Quick overnight delivery of DL-Methionine is assured when you buy from U.S.I. Warehouse stocks in major feed manufacturing areas provide you with prompt service. Order today.

For service and supply call U.S.I. at the nearest office below

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Chicago: 624 S. Michigan Avenue, WAbash 2-1650
Cincinnati: 3317 Glenmore Avenue, MOntana 2-1222
Cleveland: Rockefeller Building, CHerry 1-0073
Detroit: 1448 Wabash Avenue, WOodward 1-4220
Kansas City, Mo.: 903 McGee Street, VIctor 2-2413
Los Angeles: 1901 West 8th Street, DUnkirk 8-1423
Louisville: 7th & Bernheim Lane, MElrose 6-2511
Minneapolis: 2429 University Ave., S. E.,
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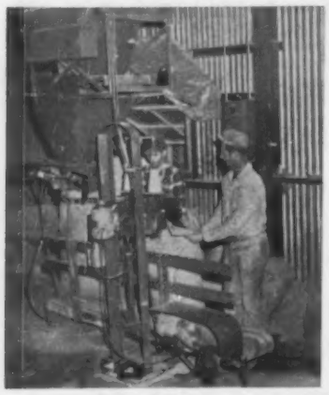
New Orleans: 708-9 Maritime Bldg., JAckson 2-0521
New York: 420 Lexington Avenue, OXford 7-0700
Philadelphia: One Bala Ave., Bala Cynwyd, Pa.
MOhawk 4-5110
San Francisco: 220 Montgomery St., EXbrook 7-3250
St. Louis: 1401 Brentwood Blvd., WOodland 1-4400

USI INDUSTRIAL CHEMICALS CO.
Division of National Distillers and Chemical Corp.
99 Park Avenue, New York 16, N. Y.

Also manufacturers of MOREA® pre-mix, sold only to authorized mixer-distributors for ruminant feeding.

WAREHOUSE—A 40 by 160 ft. warehouse provides space for ingredients and finished feed in bags. The bags are handled on pallets with a forklift truck.



BAGGING—Packing of mash pellets or cubes is handled with a Richardson unit.

facture of special mixes, bagged feeds or other types of livestock feeds.

Also, Mr. Tenney noted, this can be done with a minimum of labor with a facility which provides the degree of automation desired. And customer requirements can be met quickly.

Incoming bulk materials are received by hopper car, box car or truck. A power shovel is used for unloading. Materials are elevated to a Hayes & Stolz distributor and then go to the outside grain tanks or through a second distributor and into mill bins. The same leg is used for elevating grain from the outside tanks for grinding. The grains go over a Nor-Vell two-screen scalper before being ground. Grinding is done with a 75 h.p. Jacobson hammermill, and the material is blown to another distributor and then drops into mill bins.

For batching, a gravity, air control system is used. The operator weighs out ingredients by observing the scale dial and using levers on a control board to open and close air slide gates. The bulk ingredients go into a two-ton Fairbanks-Morse hopper scale. Minor ingredients and additives are cut in manually. The dry ingredients are mixed in a two-ton Hayes & Stolz horizontal mixer in the basement. From the batch mixer, with its remotely controlled gates, the mix then goes through a feeder and into a Hayes & Stolz high-speed mixer when fat is to be added. It takes two minutes for a batch to go into the high speed mixer.

The animal fat is stored in a 4,500-gal. tank, with temperature and agitation controls, in the boiler house. From there it is pumped to a Hayes & Stolz heating tank inside the mill, and then the desired percentage may be added through the automatic control system.

The mixed mash is elevated to a Nor-Vell Hustler sifter and then moves by gravity or screw conveyor to the sacking bin, pellet mill bins or outside bulk bins. Packing of mash, pellets or cubes is handled with a Richardson automatic unit.

Pellets are made on a 100 h.p. Helm machine and then drop into a Helm two-stage horizontal cooler. The pellets or crumbles are elevated with the pellet mill leg to a Helm shaker. Fines are returned by gravity to the pellet mill bin. Two conveyors take the finished feed to bulk bins. A reversible conveyor is used to move feed either to the packing bin or bulk feed bins.

The system is such, Mr. Hall said, that there is no interruption in pelleting and mixing. To help prevent damage to pellets, a Hayes & Stolz special two-speed "Clean Sweep" conveyor is used.

When molasses is added to feed, it

WEIGHING BULK FEED — Employee Johnnie Cox is weighing bulk feed as it is loaded into a truck.

is pumped from a steam-heated storage tank with automatic temperature controls to a molasses tank inside the mill. The molasses is applied to feed in the pellet mill mixing chamber.

For loading out of bulk feed, the truck driver operates rack and pinion gates on the overhead bins. The truck scale dial is inside the office, but use of a speaking tube for communication between the driver and man at the scale dial permits rapid, accurate loading.

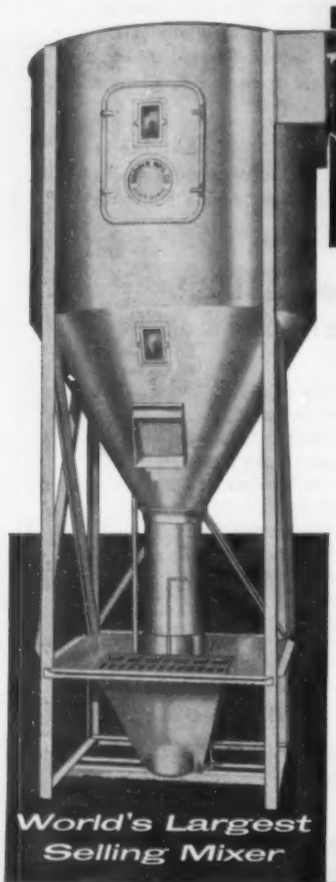
The entire operation, said Mr. Scott, makes for efficient specialized production of feed in this day of specialized feeding.

NEPPCO Announces Egg Quality 'College'

TRENTON, N.J.—A four-day "egg quality college" designed to train poultrymen, candlers, graders and market specialists in producing and marketing a uniform, high-quality egg will be held June 14-17 at Rutgers University.

The school, sponsored by the Northeastern Poultry Producers Council (NEPPCO), is the 29th to be held under the Council's supervision.

Registration forms and further details may be obtained from the NEPPCO office, 10 Rutgers Place, Trenton 8, N.J. Provision is made for classes, rooms and meals so that prior registration is important, according to NEPPCO officials.



"We sell a lot more feed since we installed our BROWER MIXER"

Says Lewis Olson, Manager
Kasbeer Farmers Elevator Co., Kasbeer, Illinois

"We just had a grinder until we got our 2-ton Brower installed. We are sure pleased as we do more grinding now and sell a lot more feed. Our Brower Mixer has increased the number of our custom mixing customers 25% and our custom mixing profits 25% or more."

BROWER Whirlwind MIXER

Dependability, fast mixing action, and low cost operation make Brower the WORLD'S LARGEST SELLING MIXER! Brower action WHIRLS the ingredients instead of just stirring or tumbling them . . . produces the most thorough mix you can get. Every sack has the same even mixture.

FAST and ECONOMICAL — a perfect blend in about 10 minutes at a power cost of only 3c to 5c a ton. Five sizes — 700, 1200, 2000, 3000 and 4000 pounds-per-batch mixing capacities. Above-floor and below-floor models. Heavy welded steel construction — built for years of trouble-free service.

Interior easily reached throygh large hinged service door and hinged conveyor sleeve.

Exclusive BROWER mixing paddle at top WHIRLS ingredients for thorough, even mixtures.

Glass observation window at eye level provides easy inspection of feed being mixed.

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This 50 pound bag of

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will provide positive vitamin K fortification to 3200 tons of your poultry feed for a little over 2½¢ per ton

Improved
High Potency
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Vitamin K Available

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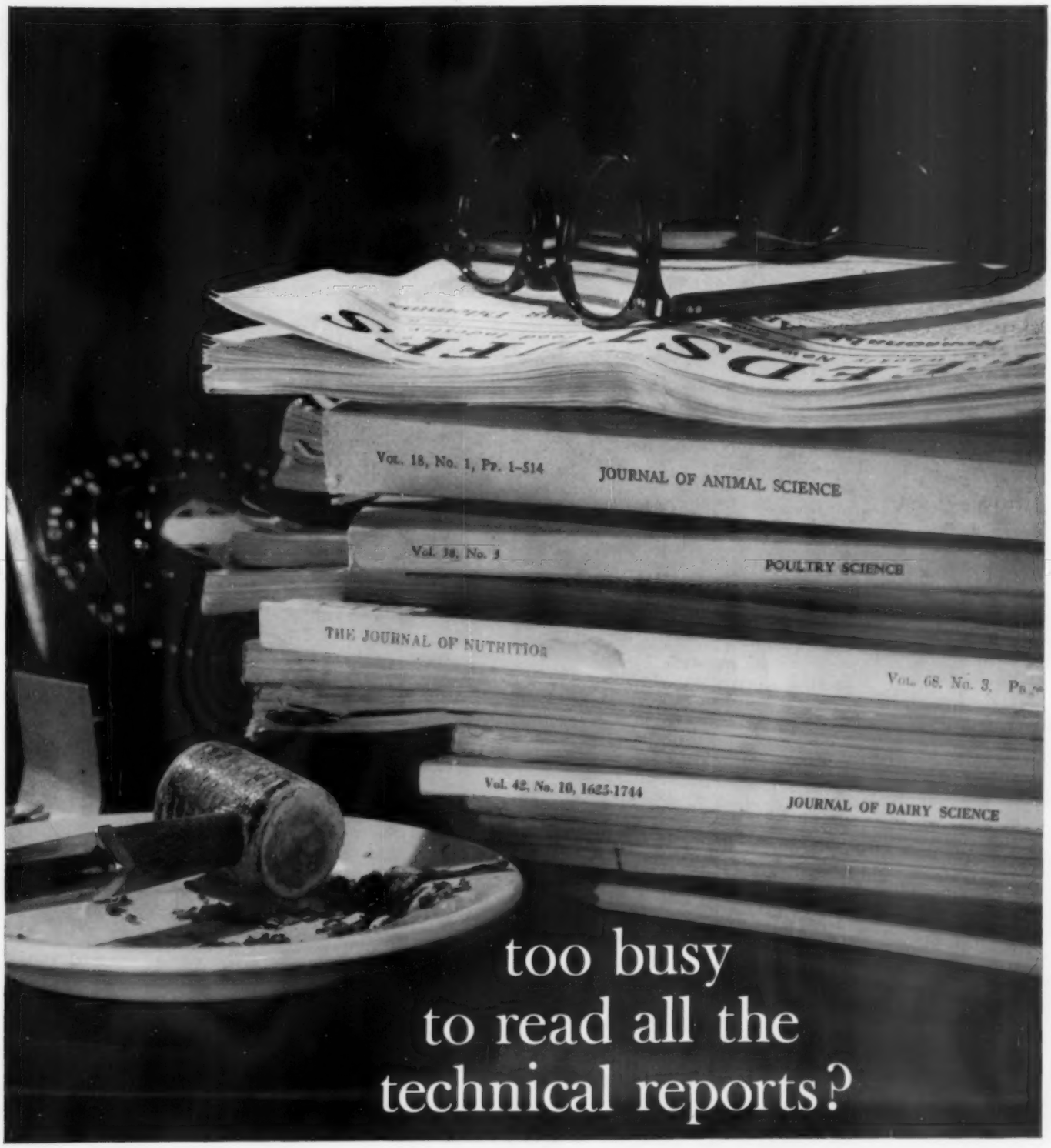


Trust Morton to keep up on salt and trace mineral research for you. For Morton's nutritional staff constantly reads and evaluates all the reports on new developments in this increasingly important field of animal nutrition.

Besides studying these reports thoroughly, Morton nutritionists work with Morton chemists to test and blend trace minerals and salt to make sure you get only high-quality ingredients in Morton Mixing Salts. Rigid quality controls and production procedures further assure you mixing salts of unvarying high quality for maximum results in your feeds.

With more than 30 years' experience in selecting and mixing trace minerals and salt for formula feeds, and with the most complete salt research laboratory in the world, Morton offers you a trustworthy source of information on any feed problem relating to salt and trace minerals.

Remember, too, Morton offers you a complete line of tested and proven mixing salts—Trace-Mineralized, Iodized and Special Mixing Salt—each of which is backed by research, experience and service. And you can get Morton Mixing Salts anywhere in the country. For more information, ask your Morton representative or write:

Morton Salt Research Laboratory, Woodstock, Illinois

MORTON SALT COMPANY

NUTRITIONAL
RESEARCH DEPARTMENT
110 No. Wacker Drive, Chicago 6, Illinois

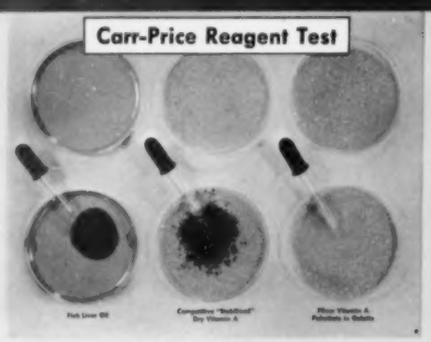
How Pfizer A is Tailor

Here's why Pfizer's Vitamin A is your least-cost source by far

THE BEST PROTECTION

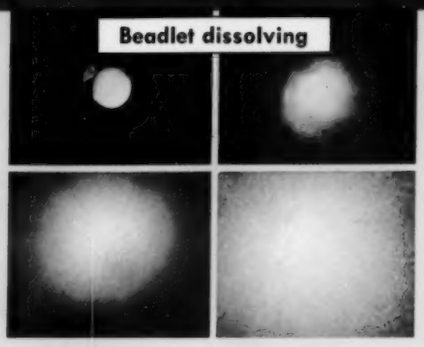
(this special gelatin matrix is far more than a diluent...
actually improves total performance of vitamin A in your feed products.)

...it provides unbeatable protection



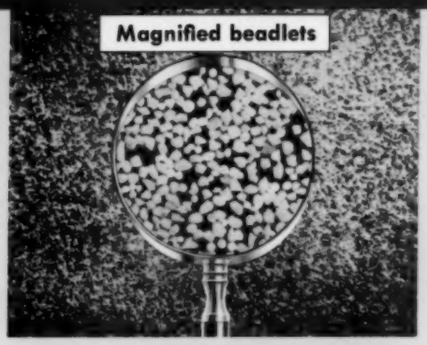
Fish liver oil (above) and many ordinary competitive vitamin A products react strongly . . . means some vitamin A is exposed and unprotected. Pfizer Vitamin A particles are sealed in gelatin to protect potency from oxidation.

...promotes greater bio-availability



It dissolves completely in digestive fluids at body temperatures to release 100% of the vitamin A for rapid absorption. Other products with waxes may inhibit release. Those with oils are not as efficiently absorbed.

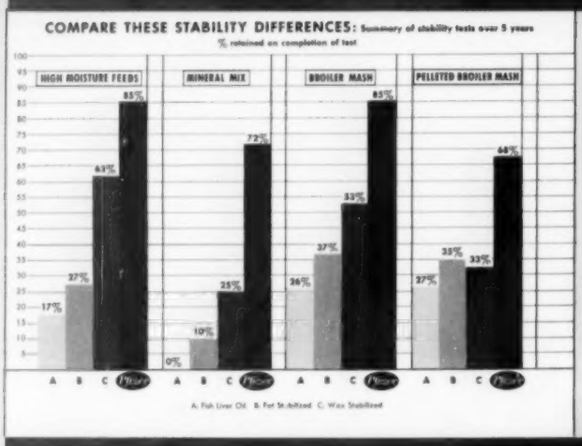
...and it's tailor-made for mixing



Dry, uniform, free-flowing beadlets aid in thorough distribution. Size and potency have been specially selected to facilitate the best distribution in your feeds . . . especially important with starter and pre-starter feeds.

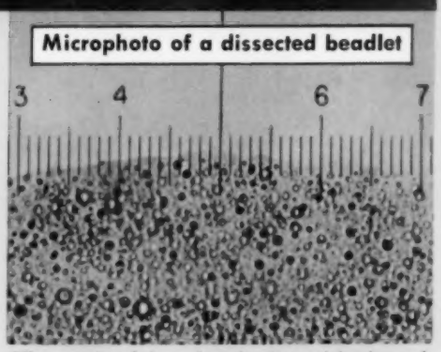
TEAMED WITH THE HIGHEST-QUALITY CRYSTALLINE A

...unsurpassed stability in all types of feed



Pfizer Vitamin A retains greater potency in pelleted and high-moisture feeds, concentrates, mineral mixes, supplements, bulk feeds and range cubes. Cuts costly overfortification. Assures you of providing more vitamin A when feed is consumed.

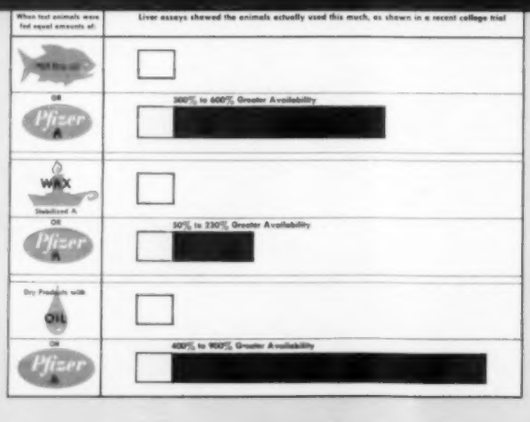
...most usable form of vitamin A



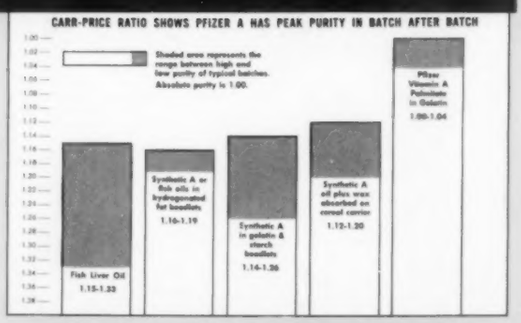
Thousands of tiny vitamin A particles in each gelatin beadlet disperse most rapidly in digestive fluids—are available for absorption at once.

...maximum biological availability

A recent college test shows Pfizer Vitamin A has availability from 300-600% greater than fish liver oils, 50-230% better than ones in wax and up to 900% greater availability than dry products with oil. Liver assay tests are the final proof of vitamin A absorption . . . show how much is assimilated and stored.



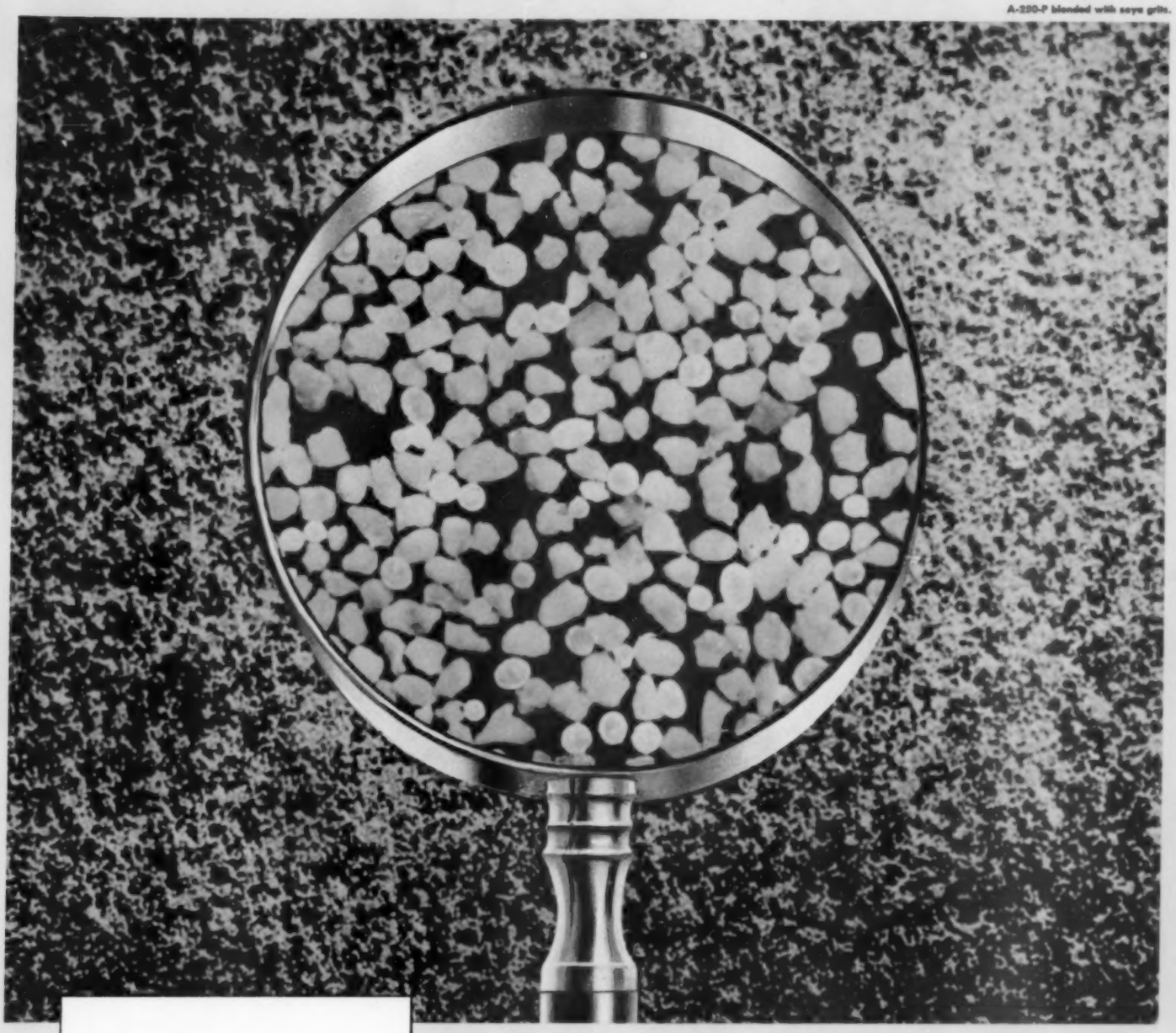
...and the highest purity


CARR-PRICE RATIO SHOWS PFIZER A HAS PEAK PURITY IN BATCH AFTER BATCH
Shaded area represents the range between high and low purity of typical batches. Absolute purity is 1.00.
Fish Liver Oil
1.15-1.33
Synthetic A or fish oils in hydrogenated fat beadlets
1.16-1.19
Synthetic A in gelatin & starch beadlets
1.14-1.26
Synthetic A oil plus wax absorbed on cereal carrier
1.12-1.20
Pfizer Vitamin A Palmitate in Gelatin
1.00-1.04

Impurities can contribute to loss of vitamin A. Pfizer, by achieving 99% purity, supplies you with vitamin A having greater stability in shipment, storage, mixing and in feed.

-Made For Better Mixing

A-220-P blended with soya grits.



Pfizer Vitamin A Palmitate in Gelatin beadlets are uniformly distributed throughout the diluent . . . essential for the best mix in feeds. Beadlets are 40-100 mesh in size, photo above is large-scale magnification.

Uniform beadlet size helps avoid an excess of vitamin A in your feed one day and a shortage the next.

The special gelatin beadlets of Pfizer Vitamin A are of a carefully selected and controlled mesh size for uniform distribution. When you supplement with Pfizer Vitamin A at practical levels, you insure sufficient beadlets in the daily feed intake. Even baby chicks will receive sufficient vitamin A during the critical early days of life.

These special gelatin beadlets help give you unsurpassed stability in all types of feed —mineral mixes . . . high-moisture feed . . . pelleted feeds . . . range cubes . . . bulk feeds for on-farm storage . . . concentrates—even with long storage.

You save more because Pfizer A delivers more.

Pfizer

Chas. Pfizer & Co., Inc.

Science for the world's well-being...

Vitamin A Palmitate in Gelatin

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When the heat is on
for rush shipments of
pure crushed
reef oyster shell . . .
sound the alarm
for **Shellbuilder.**

SHELLBUILDER COMPANY
MARINE BUILDING
HOUSTON, TEXAS

February Fish Meal Production Off 13%

WASHINGTON—The 1,923 tons of fish meal and scrap produced in the U.S. during February were 13% less than the amount produced in the same month last year, the Bureau of Commercial Fisheries reports.

Tuna and mackerel meal production—1,449 tons—accounted for 75% of the month's total meal output and was slightly below the February, 1959, figure.

The bureau reports that during the first two months of this year, meal and scrap production—around 4,000 tons—was 21% below the amount reported for the same period in 1959.

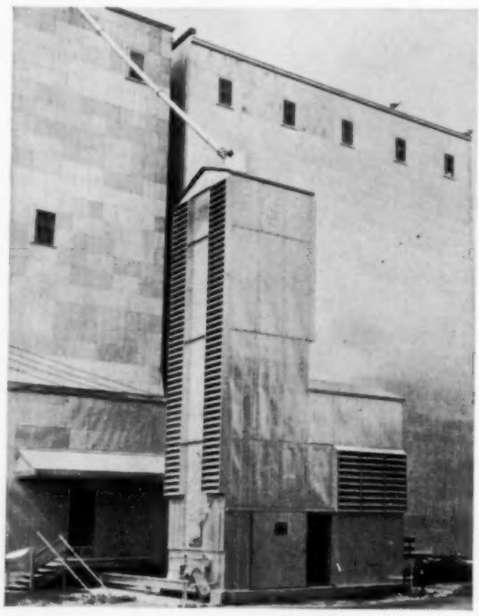
SELEY & CO. MOVES

PASADENA, CAL.—Seley & Co. has announced the removal of their offices to their own building at 1515 Hope Street in South Pasadena. New phone numbers are MUrray 2-3554 and SYcamore 9-1196.

ONE OF IOWA'S LEADING ELEVATOR OPERATIONS REPORTS ON SHANZER GRAIN DRIER PERFORMANCE

"Volume up 25%, grain quality tops, operating cost at a minimum—thanks to our SHANZER DRIER"

Says, Donald M. Hartz, Mgr., Maynard Co-operative Company, Maynard, Iowa



Mr. Hartz continues:

"...after checking many different makes of driers we found Shanzer to be superior. Our unit happens to be a Model 39, which was just right for our present and planned volume requirements.

"Service from start to finish was outstanding--and their representative did not sell us and then forget us. They contact us periodically to see how we're getting along, and we have found their people exceptionally well schooled in every aspect of equipment and overall drying operations.

"...from every angle our Shanzer drier has proved to be an outstanding investment."

WHY YOU GET MORE FOR YOUR DRIER DOLLAR WITH A SHANZER

Screen column design, found only in Shanzer driers, puts all the grain near warm air source for amazing drying uniformity and high capacity. No ledges to block grain flow.

Complete planning assistance is available from our fully staffed engineering department on drier layout, flow problems and special handling equipment.

Specialized manufacturing methods and equipment, backed by over 25 years of drier experience, assure the highest quality obtainable in grain drying machinery.

Custom fitted installation gives you maximum processing efficiency. All parts are die-punched for true erection and easy interchange. Every detail is permanently recorded.

SHANZER MANUFACTURING COMPANY

Designers and Manufacturers of Stationary and Portable Grain Driers, Bucket Elevators, Conveyors and Manlift Elevators

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SHANZER

Send for *Free Folder* giving full details

Livestock Output In Nation Reaches New High in '59

WASHINGTON—The Agricultural Marketing Service of the U.S. Department of Agriculture reports that farm production of meat animals in 1959 totaled 52.7 billion pounds live weight. This is the highest production on record, and an increase of 8% over the 1958 totals.

Cattle and calf production amounted to 56% of the total farm production of meat animals last year, with hogs furnishing 41%. The remaining 3% came from sheep and lambs, the annual report showed.

Gross income from livestock was down 2%, however. During 1959, it amounted to $11.4 billion as compared to $11.6 billion a year earlier. Actually gross income for cattle and calves was above that of 1958, but the lower prices for hogs, sheep and lambs lowered the total income from meat animals.

Cattle and Calves—Production of cattle and calves last year was 29.7 billion pounds, 7% more than the 27.7 billion pounds produced in 1958. Increase in production was due to the increase in inventory numbers. Gross income from cattle and calves amounted $8 billion, which is 6% above the 1958 total.

Average price per 100 lb. live weight received by producers in 1959 was $22.60 for cattle and $26.60 for calves. Average selling prices in 1958 were $21.90 for cattle and $25.20 for calves.

Hogs—Hog production last year is estimated at 21.5 billion pounds, up 10% from the 19.4 billion pounds produced in 1958. This is 15% below the record of 25.4 billion pounds set in 1943. Gross income in 1959 was $3 billion, 18% smaller than the $3.7 billion in 1958. The average price per hundred pounds live weight was $14.10 in 1959 compared with $19.60 in 1958.

Sheep and Lambs—Production of sheep and lambs in 1959 amounted to 1.7 billion pounds, which is 3% above that of 1958. Gross income was $340 million in 1959 compared with $360 million a year earlier. Last year, sheep sold for an average of $5.99 per hundred lb. live weight and lambs at $18.70. The average price in 1958 was $7.13 for sheep and $21 for lambs.

Idaho Cattle Feeding Shows Rapid Growth

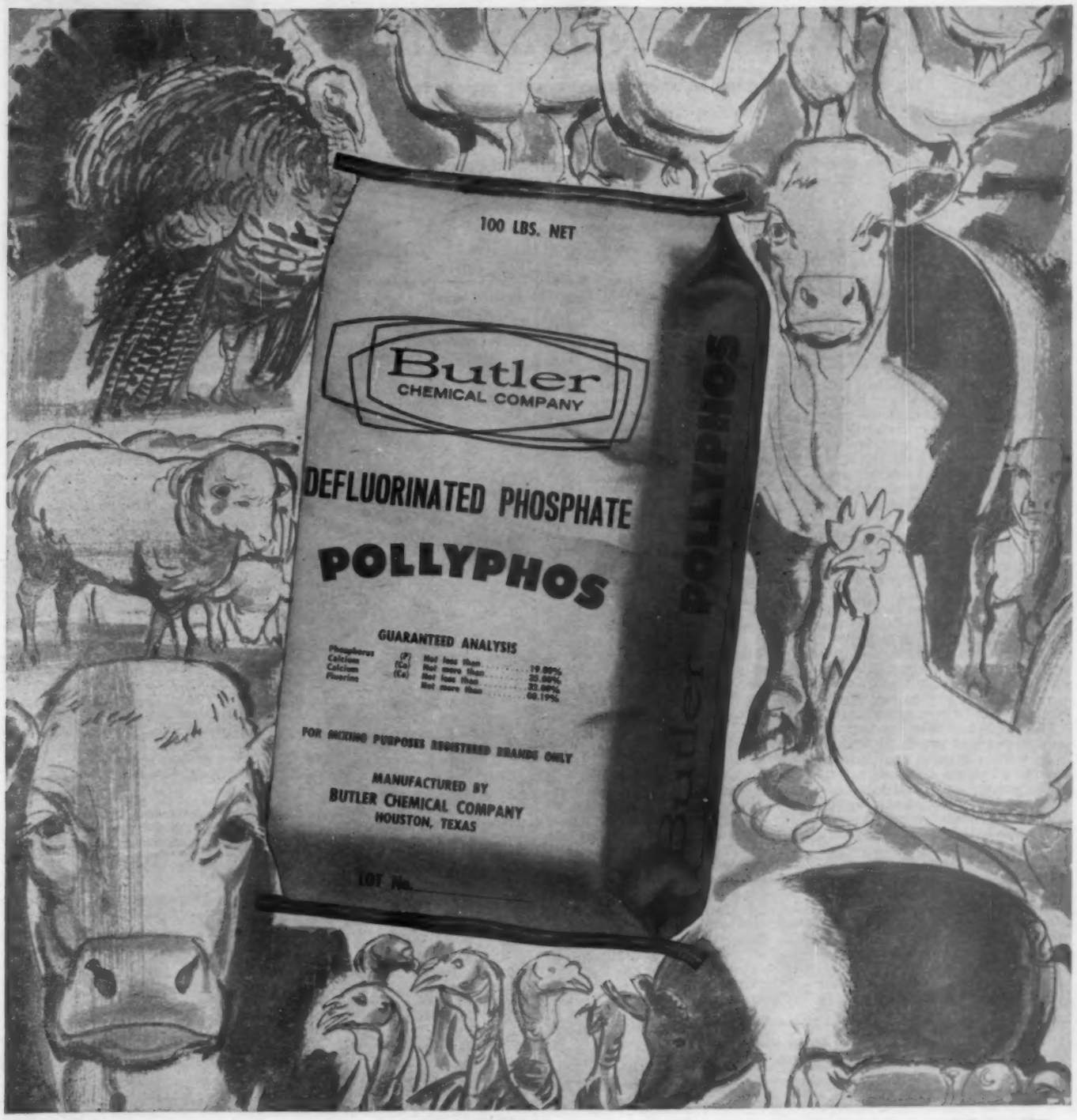
MOSCOW, IDAHO — By 1968 the beef cattle industry will be Idaho's biggest single source of income, according to T. Donald Bell, head of the department of animal husbandry at the University of Idaho. He said that it is now the largest single source of agricultural income in the state.

Feeding of cattle has increased sharply in recent years, particularly in southern Idaho. The average number in feedlots during the decade between 1930 and 1940 was 26,000, he noted, while last year Idaho cattle feeders finished 149,000 head.

He credited four factors for the growth: "Increasing abundance of feed products in the state; increasing number of available feeder cattle; expanding markets on the West Coast, and increasing awareness of more people of the possibilities for cattle feeding."

Top Layers Announced

HAZARDVILLE, CONN.—Winners of the White Rock Hen 1959 Storrs Egg Laying Test have been announced. A Pilch Breeding Farms, Inc., White Rock laid 277 eggs for 295.1 points and a 79.1% production for the year (350 days). Pilch also had the highest pen White Rocks, laying 3,008 eggs for 3,211 points and a 66.1% production for the year (350 days).



Butler POLLYPHOS

Producers of the highest grade livestock and poultry — the country over — are fully aware that in order for them to retain their enviable position . . . they must continue to use formula feeds which include the best ingredients produced.

The defluorinated phosphate produced by Butler Chemical Company . . . POLLYPHOS . . . is your source of PHOSPHORUS which meets these rigid requirements in every respect.

BUTLER POLLYPHOS has an all time high phosphorus content of 19% with a minimum 32% — maximum 35% calcium and no more than 0.19% fluorine.

BUTLER POLLYPHOS can be delivered to you in 100 lb. multiwall bags, in bulk, or in truck or carload lots.

Phone, wire or write us or your nearest Butler Sales Agent for low delivered prices of BUTLER POLLYPHOS to your plant.

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CHEMICAL COMPANY

Sales Division: 1230 Esperson Building
Houston 2, Texas • Phone CA 2-9711

Plant & Warehouse: P. O. Box 938 • Galena Park, Texas • Phone OR 2-7587

SALES AGENTS: Warner Brokerage Co., Inc., Minneapolis • Carroll Swanson Sales Co., Des Moines • Warren Sales Co., Denver
James P. Sprigg Co., Los Angeles • White Star Concentrates Co., Portland • E. A. Towns Limited, Vancouver 1, B. C.

FEED, FAT AND SWINE

"The most practical ways to alter carcass quality appear to be: Breeding . . . lowering slaughter weight . . . optimum environment . . . high levels of high quality protein . . . possibly altering growth pattern through controlled energy."

By Dr. C. C. Brooks
Virginia Polytechnic Institute

If we view the potential of the swine industry optimistically, we cannot help but see it as an enterprise that will play a very important role in our national economy and one that will have a great effect on the volume and consequent profit of the feed industry. Because of the many ways of merchandising pork, the volume that can be sold appears to be much greater than what is now produced. Couple this with the need for new industry to consume grain and to replace fading industries now on farms, and one cannot but wonder why we are moving so slowly toward a larger swine industry.

Certain problems must be solved before this industry can reach its culmination in our economy. We must provide the consumer with a constant supply of pork of the quality that is attractive to him and sell it at a constant and competitive price. This must be done in a way to insure a profit for each segment of the industry. We still have not completely removed the old stigma resulting from the unjustifiable concept that pork is "unhealthy and a poor man's meat."

The supply and price situation will be taken care of largely by changes in production systems and patterns, changes which are occurring rapidly at the present time. This leaves the major problems dependent upon improving the quality of the product that we have to sell. This problem is still one of increasing muscle or lean and decreasing fat.

Many means have been proposed for altering the lean-to-fat ratio of swine carcasses, but many of these cannot be practiced without decreasing feed efficiency. In our competitive economy we cannot recommend any system that will lower efficiency.

Perhaps a brief review of what happens to feed energy will help to point out how efficiency will be influenced. The data in Table 1 gives an approximation on how feed energy is used and a breakdown of the energy in the lean and fat gains of the pork carcass.

The primary methods that have been offered for changing the lean to fat ratio are: Breeding, exercise, lowering slaughter weight, temperature control during growth, hormone alteration and altering the feed or feeding methods.

1. Breeding, over a long period, is the most logical method offered to increase the muscle mass and decrease the fat of swine. The inherent potentials for large muscle mass and low fat are not one and the same. An even greater effort should be made toward a wider distribution of breeding hogs that do produce attractive and desirable pork.

The rate at which herds can be improved was well demonstrated by the University of Kentucky when over a 5-year period, the percent of No. 1 carcasses in a Hampshire herd was increased from 55 to 95 with a concurrent improvement in feed efficiency of 9%.

There still exists among some a belief that fat-type hogs are faster gaining and more efficient. Such a belief results from the fact that within a given group, the heavy eaters and faster gaining hogs are fatter since any energy intake beyond that needed to meet the maximum growth is stored as fat.

This does not mean that heavy muscled hogs are not fast growing or efficient. In fact, they are more efficient and may grow faster. Ohio Boar Test Station data on hogs that certified as meat type, as compared to those that did not, shows this very conclusively. In this study, the rate of gain was equal while feed efficiency was over 5% greater in the heavy muscled hogs.

Even though the rate at which we have improved pork through breeding is greater than some writers have indicated, this rate will increase as we move away from selecting on traditionalism and adopt methods which use objective measures of quality.

Recombining genes through selection to build an animal with maximum consumer desirability, however, is a slow process. Even when this is done, this gene combination is an inherent capacity that can be reached only with optimum environmental conditions. If we feel that this is the stopping point, we may be selling research short. Who is to say that we will not find a key that will change what we now call inherent potential?

2. Exercise will increase muscle size and decrease fat. The latter results from energy being used for exercise instead of gain and consequent fat. Feed efficiency is thus lowered. A sound business cannot withstand such nonsense for long.

3. Reducing slaughter weight is a very real way of increasing the ratio of carcass lean. Armsby (1908), Brody (1922), Hammond (1932), McMeekan (1940), and Zobresky et al. (1958) have each shown that after a pig reaches a certain age, the rate of muscle formation decreases while the rate of fat deposition increases.

Recent work at the Virginia station indicates that certain muscles increase their mass greatly during the period of growth from 100 to 150 lb. but after this weight is reached, the increase becomes very slow. (Table 2).

It is obvious that this last 50 lb. is the most expensive gain. What about the cumulative costs which include the fixed costs, such as breeding herd or the feeder pig? As production expenditures are reduced by such things as lower feed costs and more efficient sow production, the cumulative cost per unit of live hog reaches its lowest point at lighter weights. The point of lowest cumulative cost per live unit slipped back, apparently unnoticed, until it was near 150 lb. in 1959.

(See Figure 1.)

Although the research that has been done on consumer acceptance of the meat from light-weight hogs is not adequate, there is no reason to believe that this pork will not be acceptable.

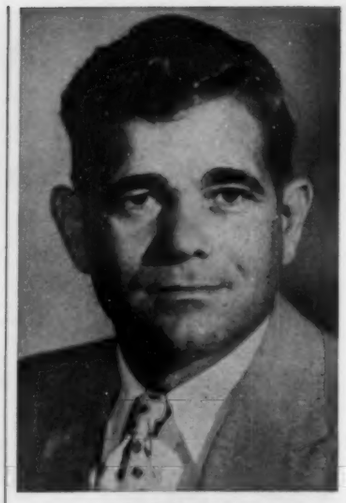
4. Maintaining optimum temperature and other environmental conditions during the growth of the hog has proven to bring about great increases in efficiency of feed utilization. Clausen, during his recent visits to the U.S., stated that work done in Denmark showed that hogs raised under very low temperatures had fatter carcasses. Nitrogen balance studies indicated that during periods of low temperature, protein was used to keep the hog warm. This concept should be looked into more thoroughly.

5. Hormones have not been widely used in swine feeding since they have not increased gain or feed efficiency to the extent that they have in ruminants. It has been demonstrated clearly by Ohio workers, however, that both boars and gilts have greater muscle mass and less fat at given weight than do barrows. (Table 3.)

The sex hormones thus hold possibilities as a means of improving carcasses. Either the growth or thyroid hormone may alter carcass composition but methods for their practical use have not been developed.

6. Alteration of feeds or feeding methods may be used in several ways to alter carcass composition: In 1940, McMeekan and Hammond investigated the problem of rate of gain and growth pattern in relation to carcass excellence. These studies showed that growth during particular periods had a greater effect on carcass composition than average growth over the whole feeding period.

The important finding of McMeekan was that the rate of muscle formation in the hog increases from birth up to 16 weeks of age and then declines, while fat deposition increases progressively up to market weight. These workers recommend-



C. C. Brooks

AUTHOR—Dr. C. C. Brooks has been with the Animal Husbandry department at Virginia Polytechnic Institute since 1954. He performs both teaching and research functions in the swine area. Major areas of research include studies of factors affecting cellulose digestion in ruminants, protein levels and quality including amino acid work in swine rations, use of lard in rations, trace minerals in rations, protein energy relationship in rations and effect of antibiotics in swine rations. At present Dr. Brooks is working on protein quality and sources in swine rations and the effect of growth pattern on tissue development. Dr. Brooks received a B.S. degree from Arkansas State College and an M.A. and Ph.D. from the University of Missouri. Before joining the Virginia Polytechnic Institute, he performed teaching and research in the University of Missouri's animal husbandry department.

TABLE 1. Feed Energy Uses by Swine

BASAL METABOLISM (45% of total)	ACTIVITY FACTOR (25% of total)	TISSUE ENERGY (30% of total)
Body Temperature	S.D.A. of Feed	Muscle—770 Cal./Lb.
Muscle Tone	Exercise	Fat—3,640 Cal./Lb.
Life Processes		Other Tissue

FIGURE 1

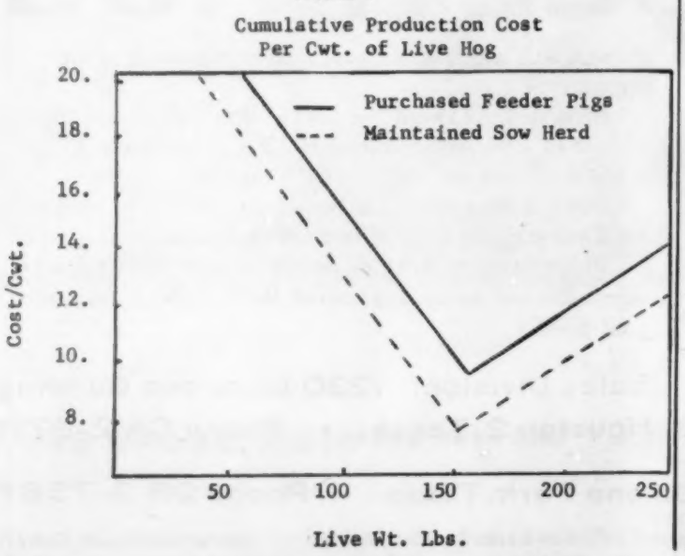


TABLE 2. Effect of Slaughter Weight on Certain Weights and Measures of the Hog Carcass
(Preliminary Data)

Sl. weight (lb.)	Carcass Lg. (in.)	B.F. (in.)	Loin eye area at 10th rib (sq. in.)	Wt. loin eye muscle* (lb.)
50	20.25	.31	1.42	.63
100	24.90	.69	2.28	.91
150	27.65	.87	3.65	2.01
200	30.38	1.24	3.99	2.58

*Taken from the 4th rib to the 2nd lumbar vertebra.

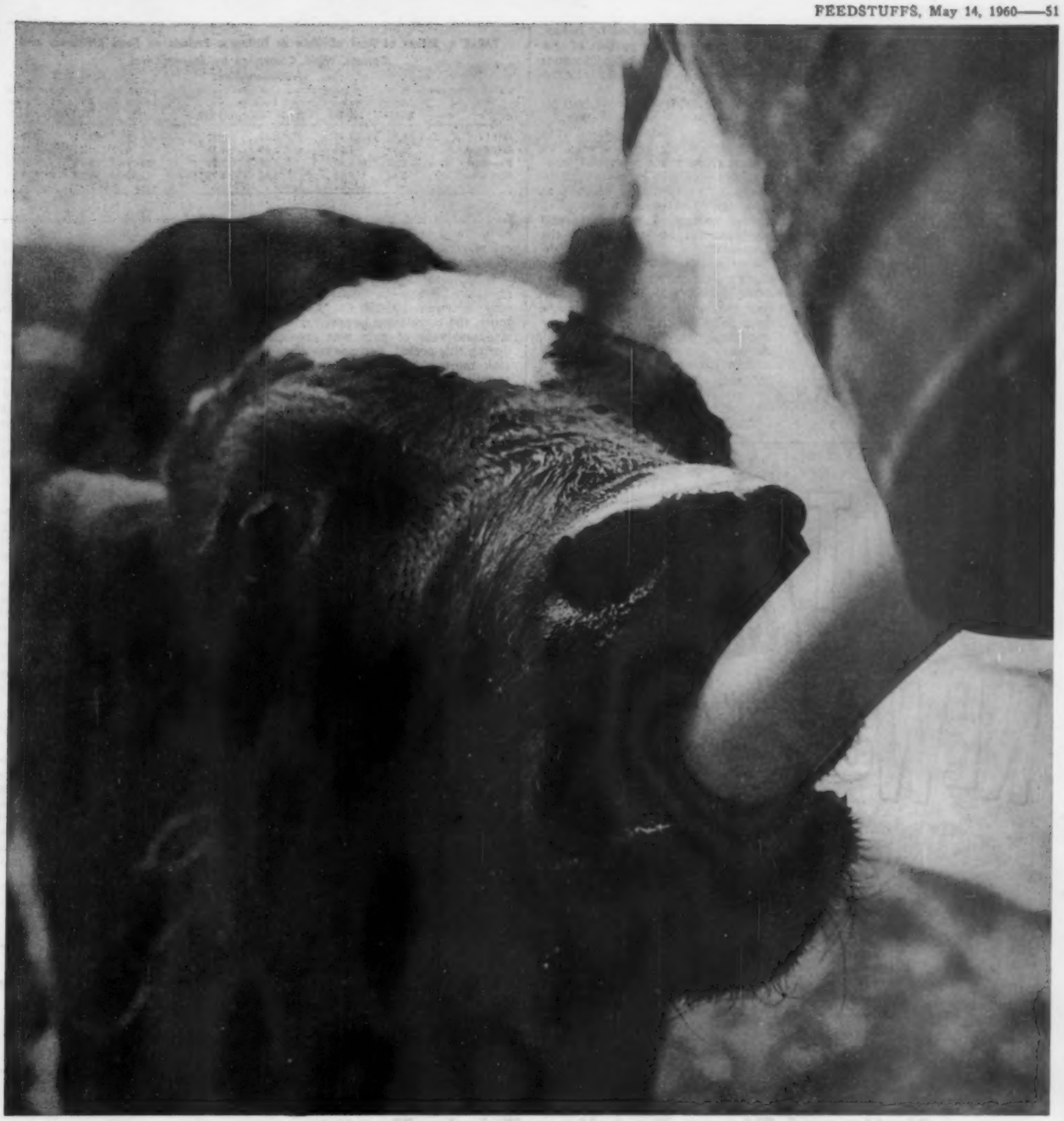


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TABLE 3. Influence of Sex on the Carcass at 210 lb. (From Ohio An. Sci. Mimeo No. 114)

	Barrows	Gilts	Boars
Dressing, %	77.1	78.1	75.7
Carcass Lg. (in.)	28.3	29.2	29.4
Backfat (in.)	1.8	1.6	1.5
Loin eye muscle (lb.)	2.2	2.9	3.0
Lean cut % of kill wt.	36.2	39.5	40.2
Tenderness*	7.4	7.5	7.4
Flavor**	6.7	6.5	5.6

*10=very tender; 1=very tough.
** 9=like very much; 1=disliked extremely.

ed that a rapid rate of growth up to 16 weeks accomplished by full feeding, followed by a slower growth rate to market weight by restricted feeding, produced the most desirable type of hog carcass.

Restricting energy intake by hand feeding is just not practical in today's commercial feeding operations. There has been a great deal of work done, therefore, to investigate the feasibility of reducing growth rate in pigs during the finishing period by reducing the usable energy portion of the ration. This can be done by introducing feeds high in crude fiber into the ration.

Crampton (1954) showed that diluting the energy of the ration by feeding fibrous feeds decreased rate of gain, increased the feed required per unit of gain but increased lean-to-fat ratio of the carcasses. Clausen (1959) reported that where beet pulp silage or oat straw was used to decrease energy of the ration and consequent fat in the carcass, the fat was soft.

These methods of reducing fat, by reducing gain during the last of the feeding period, will increase maintenance cost since the hogs must live longer to reach a given weight. On the other hand, if less fat is stored, then less energy is stored in the animal and it is conceivable that with very lardy hogs this might offset the greater mantenance cost.

It would be very difficult, however, to find the level of energy or level of feed that would give maximum efficiency and optimum fat under each set of conditions and for each group of hogs.

TABLE 4. Effect of Rate of Gain at Different Periods on Feed Efficiency and Carcass When Controlled by Energy Level (Preliminary Data)

	Av. daily gain		Feed/lb. gain		Length	B.F.	Loin area
	Br-100	100-200	20-100	100-200	in.	(in.)	(sq. in.)
Fast-Fast	0.98	1.95	2.60	3.90	30.25	1.30	3.72
Fast-Slow	0.99	1.50	2.60	4.70	30.38	1.28	3.85
Slow-Fast	0.83	1.90	3.20	3.90	30.38	1.19	4.09
Slow-Slow	0.84	1.50	3.20	4.70	30.50	1.20	4.29

It has already been stated that the greatest increase in muscle size occurs between 100-150 lb. Furthermore, the correlation between muscle size and rate of gain was greatest during this period. Perhaps we should look more closely at just when restricting of feed would need to be started. The data of Table 4 shows the effect of varying the rate of gain during the periods from birth to 100 lb. and from 100 to 200 lb. live weight.

One might speculate that it would be more practical to feed a lower energy level only during the last 50 lb. of gain. We do not have data, however, on such a program at the present time.

The work of several stations including Virginia has shown that feeding rations adequate in protein for maximum growth resulted in a higher ratio of lean in the carcass than did rations that had less protein. This was very apparent when the amino acid ratio was changed with the protein level, as will happen in practical feeding where the protein level is lowered by replacing supplement with corn.

In addition to this, the level required for maximum gain will vary with the disease stress on the animal and the essential amino acid level and ratio in the ration.

Tables 5 and 6 show data from two trials which demonstrate this. The data in Table 5 is taken from a trial in which no antibiotic was used to lower disease stress and the protein levels were changed by altering the corn and supplement, thus altering the essential amino acid ratio as well as level.

Table 6 shows data from a trial in which the amino acid ratio was kept constant and an antibiotic was used. These factors should all be given serious consideration before recommending a feeding program which supplies a low-level protein intake. In light of the effect of protein level on both feed efficiency and carcass, the situation is rare indeed under which we can justify a level of pro-

TABLE 5. Effect of Protein Level (Amino Acid Ratio Not Constant) and No Antibiotic

Protein % (30-75, 75-105, 150-200)	18-15-12	16-13-11	14-11-8
A.D.G.	1.49	1.45	1.04
Feed/lb. gain	3.80	3.93	5.11
Carcass			
Backfat	1.38	1.52	1.24
Loin area	3.71	3.37	2.56

TABLE 6. Effect of Protein Level (Amino Acid Ratio Kept Constant)

Protein level	16	13	10
A.D.G.	1.92	1.87	1.77
Feed/lb. gain	3.18	3.43	3.60
Carcass			
Backfat, in.	1.52	1.62	1.76
Loin area, sq. in.	3.92	3.92	2.87

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TABLE 7. Effect of Lysine on Daily Gain, Feed Efficiency and Carcass Using a Peanut Oil Meal (PM) Corn Basal Ration

	Basal	+ l-Lysine (HCL)	+ l-Lysine (HCL) Methionine (0.3%)
Lysine % of total ration	.29	0.67	0.67
A.D.G.	.98	1.46	1.48
Feed/lb. gain	4.71	3.65	3.60
Carcass			
Back fat	1.38	1.39	1.51
Loin area	3.10	4.20	3.70

tein lower than that needed for maximum gain.

Protein quality of a feed affects the size of muscle developed in the hog. This may prove to be the greatest nutrition discovery of the last decade. Clausen pointed out that when milk made up a high percent of the protein supplement, the carcass had a higher ratio of lean than when other proteins were used. He also pointed out that when the amino acid content was altered by changing the grain mix, the lean-fat ratio was altered. Brooks and Thomas (1959) have shown that lysine level affects muscle size and that the ratio of lysine to methionine is important.

Much work is yet to be done. Clausen pointed out the need for studying the amino acid requirement for maximum carcass quality. The amino acid requirements for maximum growth rates for all ages and weights of hogs are not precisely known. They are inter-related, as indicated by the lysine methionine studies of Brooks and Thomas. Therefore, the amino acid levels required for maximum production rate will vary.

We cannot say for sure whether the amounts needed for maximum rate of daily gain are different from those needed for maximum muscle development. Data that is available up to the present leads one to believe, however, that the need for maximum feed efficiency and muscle development is greater than the need for maximum daily gain. The effect of different levels of lysine in one trial is shown in Table 8.

TABLE 8. Effect of Different Lysine Levels
(Preliminary Data)

No. pigs per lot	6	6	6	6
Lysine % of total ration	0.3	0.6	0.9	1.2
Backfat	0.98	1.21	1.19	1.28
Loin area	3.16	4.02	4.60	4.23

(Differences in the two higher levels were not significant.)

Clausen offered data which indicated that the protein level fed the sow during lactation affected the lean-fat ratio of the pig when slaughtered even though the rate of gain to weaning was not affected. Much study is needed on sow nutrition and this is one of the fields that should be investigated.

Summary: There are many ways of altering carcass quality. The most practical steps to take appear to be (1) to improve breeding stock and their distribution, (2) to decrease weight at slaughter, (3) to arrange for optimum environment, (4) to feed high levels of high quality protein to both growing and breeding animals and (5) possibly to alter growth pattern through controlled energy intake.

Turkey Production Test Begins in California

MODESTO, CAL.—Thirty-two hundred poults were put under hovers recently beginning the fifth California Official Random Sample Turkey Meat Production Test, according to Emery A. Johnson, superintendent of the California Poultry Improvement Commission.

The test is composed of 20 entries of 100 birds each, with each entry divided into two lots of equal numbers of toms and hens. Twelve hundred poults, 60 from each entry, will be raised simultaneously in one large intermingled pen in order to gather information on testing techniques.

Of the entries, 12 are bronze, 7 are large white, and one is a breed cross. As to source of stock, 13 entries are Californian, and seven come from other states, including one from Canada. Mr. Johnson reports that the hens will be processed at 22 weeks and the toms at 26 weeks and that a report to the public will be made soon thereafter.

Those wishing to be placed on the mailing list to receive the full report when it is released should write to the Superintendent, Poultry Improvement Commission, Route 3, Box 1145, Modesto, Cal.

Grace Office Moved

MEMPHIS, TENN.—W. R. Grace & Co., Grace Chemical Division, has moved its southeastern district sales office from Tampa, Fla., to 1402 E. Morehead in Charlotte, N.C. Lee Slusher will continue as southeastern district sales manager. He will make his home in Charlotte. The company's plant and main office are in Memphis. Grace Chemical manufactures and markets feed urea.

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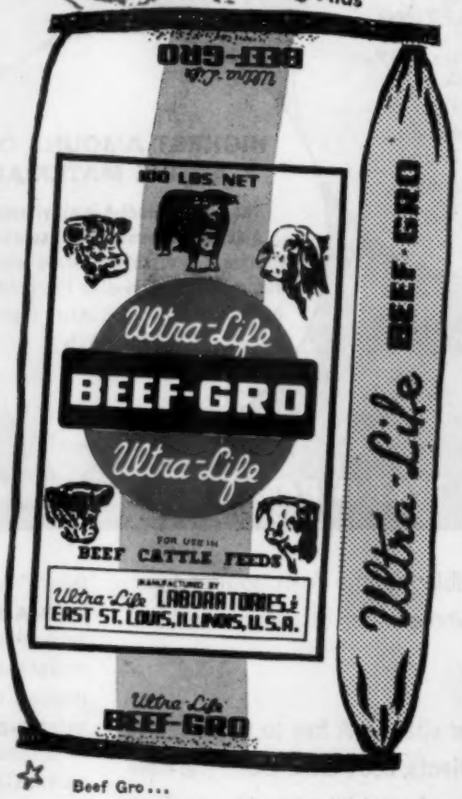

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			gms.		
A	A leading brand of Dicalcium Phosphate	0.25	264	1.69	43.73
		0.35	290	1.60	45.61
B	A leading brand of Defluorinated Rock Phosphate	0.25	289	1.66	43.56
		0.35	294	1.61	45.23
C	Cura-phos No. 1 — Composite Sample of 4 cargoes drawn in 1957	0.25	295	1.62	44.37
		0.35	299	1.62	45.61
D	Cura-phos No. 2 — Composite Sample of 4 cargoes drawn in 1959	0.25	290	1.63	43.81
		0.35	291	1.67	45.76
Negative Control		0	187	1.87	26.25

*Average of 4 replicates of 10 chicks each. Duplicate lots of 20 chicks on each assay level. Details of report available on request.

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Nutrition Symposium of National Fisheries Institute

By Steele Culbertson
Director, Industrial Products Division
National Fisheries Institute

The industrial products division of the National Fisheries Institute held its second symposium at the Sheraton-Park Hotel in Washington, D.C. Originally a program of four speakers was prepared. However, one of the speakers, Dr. H. Bird of the University of Wisconsin, did not arrive, as the airplane on which he was traveling turned back because of a storm. Dr. Bird was to have spoken on unknown growth factors in fish meal and condensed fish solubles.

Three other speakers and a new Bureau of Commercial Fisheries film entitled "Salmon—Catch to Can" rounded out the program.

Dr. Donald Snyder, assistant laboratory director of the Fishery Technological Laboratory of the U.S. Bureau of Commercial Fisheries, presented a summary of a three-year research program on fish meal quality conducted by Dr. Tom Runnels of the poultry department at the University of Delaware.

Dr. James Peifer of the Hormel Institute at Austin talked about the "Use of Fish Oil Fractions in Reducing Elevated Blood-Cholesterol Levels."

Dr. L. D. Matterson of the University of Connecticut discussed problems associated with determining metabolizable energy values of feeds and presented recent results obtained by him and Dr. Larry Potter on the metabolizable energy values of authentic samples of menhaden meals of normal commercial production obtained last year from various reduction plants located on the Atlantic and Gulf coasts.

Dr. Matterson's talk was similar to the talk he presented at the 15th Distillers Feed Research Conference and which was summarized in the March 26, 1960, edition of "Feedstuffs."

FISH MEAL QUALITY—Dr. Donald Snyder and Dr. Tom Runnels—For quite a few years, results from animal feeding experiments have indicated that the protein of commercially processed fish meals has varied considerably in nutritive quality. Variations have been noted not only between fish meals prepared from different species of fish but also between meals prepared from the same species of fish.

Adverse processing effects have generally been assumed to be the reasons for these variations. In practically every experiment conducted, however, little or no information has been available on the exact conditions under which the tested fish meals were processed. Therefore, few of these experiments were designed to permit comparisons to determine if differences in fish meal quality could actually be ascribed to commercial variables of processing.

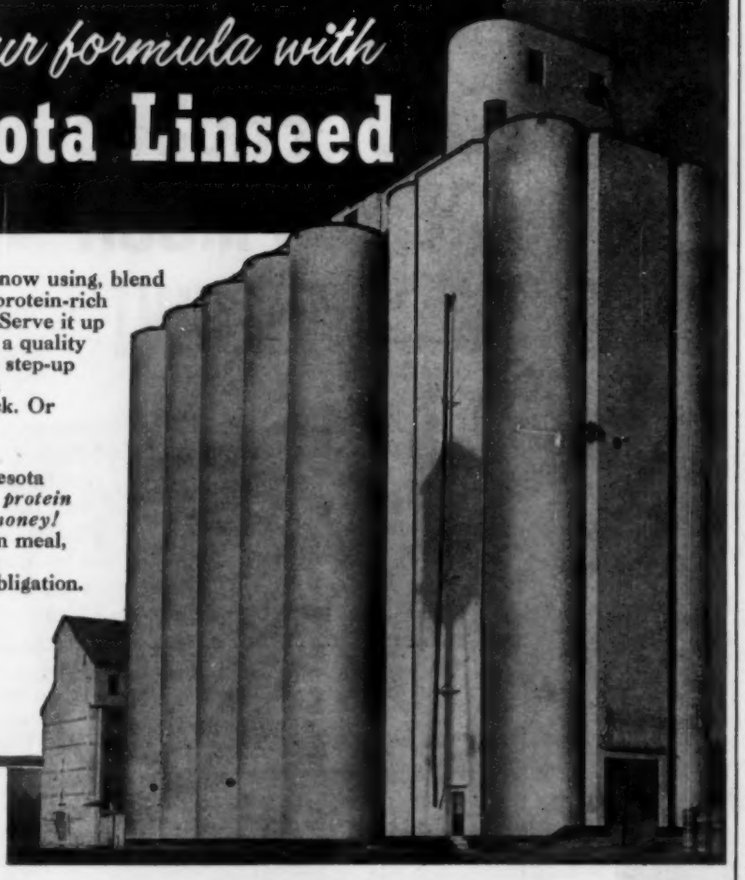
An extended research program to investigate possible variation in fish meal quality and to relate these to commercial variables of processing was initiated by the Bureau of Commercial Fisheries when Saltonstall-Kennedy Act funds became available in 1955. Under a comprehensive and unified plan, nearly 200 samples of fish meal were gathered in at least

(Turn to SYMPOSIUM, page 65)

Fortify your formula with
Minnesota Linseed

To the formulas you are now using, blend in a generous quantity of protein-rich Minnesota Linseed Meal. Serve it up to your feed customers as a quality mix, carefully balanced to step-up milk production and put a "finish" on feeder livestock. Or sell it straight, by the bag if you prefer.

Fortify profits with Minnesota Linseed Meal—*your best protein supplement for the least money!* It's convenient to handle in meal, pellet, or grit form. Free nutritional help without obligation.



Write, wire or phone us your requirements . . .
Minnesota LINSEED OIL COMPANY
OUR 90th YEAR
MINNEAPOLIS 21, MINNESOTA • SUNSET 8-9011

SNOW WHITE
OYSTER SHELL
• Steady Profits
• Highest Quality
• Best Service
White Shell
CORPORATION
Jacksonville, Florida
Distributed by
EDWARD R. BACON GRAIN CO.
177 Milk St. Boston 9, Mass.

when poultrymen say:

YOUR FEED DOESN'T DO THE JOB!

when customers complain:

THE BIRDS MUST BE TO BLAME!

when prospects say:

I CAN'T AFFORD NEW EQUIPMENT

what's your answer?

here at last is a realistic answer that makes sense . . . in a new program of major importance to feed manufacturers, feed dealers, poultry breeders and equipment men

it's called . . . . . .

FPI *Full Performance Index*

FIRST: Meet Ralph

RALPH MANNING MAKES MONEY WITH LAYERS EVEN AT LOW EGG PRICES

That's why this year he is buying

3400 more chicks than ever before
2½ times more feed tonnage
new automatic waterers
new automatic feeders
extra roosts and nests
another pit cleaner
a new egg cooler
lumber, concrete, building supplies

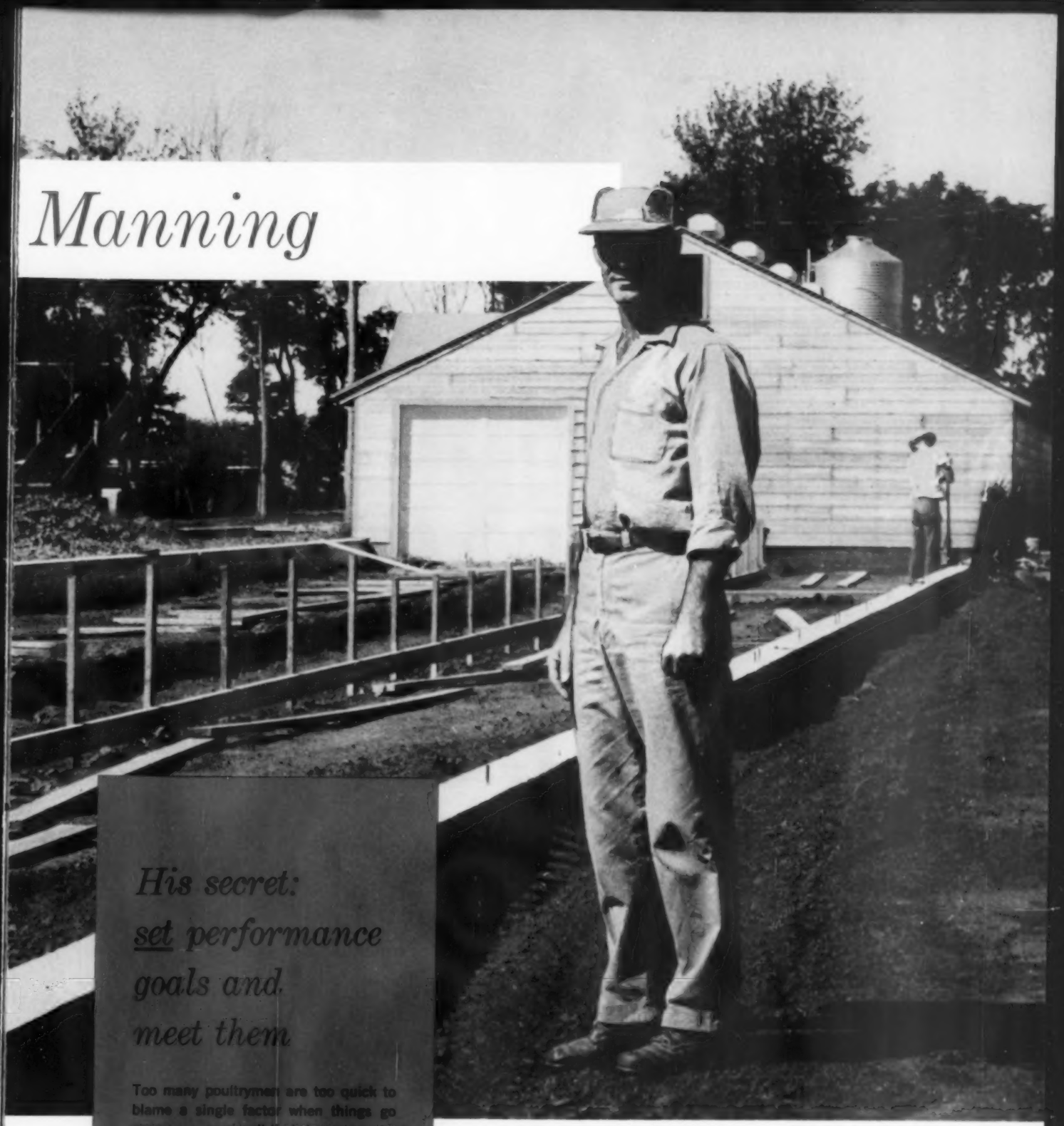
When Ralph Manning prospers...you prosper

Last year's depressed egg prices and a general lack of optimism in the poultry industry hurt more than poultrymen. Everyone . . . breeders, feedmen, equipment manufacturers, and many more . . . was affected.

In this widespread feeling of discouragement it was too easy to overlook the fact that many good egg producers were making money. Some, like Ralph Manning of Spencer, Iowa, did so well that this year they are actually expanding. They're buying *more* feed, *more* chicks, *more* equipment.

Clearly what the industry needs is more Ralph Mannings. Because *when Ralph Manning prospers, the people who serve him can prosper, too.* Besides more customers, we all need *better* customers.

Manning



His secret: set performance goals and meet them

Too many poultrymen are too quick to blame a single factor when things go wrong . . . or pin all their hopes on one way to improve profits. They buy good birds . . . and try to economize with cheap feed. They use good feed, but skimp on manizgement and sanitation.

But Ralph Manning knows every factor must be in balance. He sets performance goals for his flock, then strives to meet or beat those goals.

As one expert points out, "Today the more progressive poultrymen are constantly aware of how they stack up against others in the industry. They know that how they rate with the best will determine their future."

Manning's Flock Performance Index shows how he's meeting his goals:

EGGS PER HEN	255
LIVABILITY	95½%
FEED CONVERSION	4.1 lbs./doz.
GRADE A EGGS	95%

Now turn the page to see what this means to you ➔

FULL PERFORMANCE INDEX

HESS & CLARK NOW ANNOUNCES A GOAL-SETTING PLAN FOR POULTRYMEN . . . A PROFIT-BOOSTING PLAN THAT REALISTICALLY TIES TOGETHER BREEDING, FEEDING, EQUIPMENT AND MANAGEMENT

IT PROVIDES A COMMON-SENSE WAY FOR YOU TO HELP YOUR CUSTOMERS HELP THEMSELVES. AND AS RALPH MANNING PROVES . . . WHEN THE CUSTOMER PROFITS . . . YOU PROFIT!

HERE'S OUR STORY TO YOUR EGG-PRODUCER CUSTOMERS

This dramatic 8-page announcement will introduce the FPI plan to poultrymen this fall in the major poultry magazines. Follow-up ads in leading poultry and farm publications will carry a total of 65-million ad-page impressions to egg producers during the next 12 months. Supplementing this effort will be a heavy schedule of announcements over powerful farm radio stations.

Cover explains importance of good birds, good feed, good management, and goal-setting for high profits.

Inside pages give reader a unique way to compare his flock performance against Full Performance Index.

"See your feed dealer" is closing message. Explains how to get started, describes new free record chart.

THIS 8-PAGE "FIGURE-IT-OUT-FOR-YOURSELF" ADVERTISEMENT EXPLAINS FPI TO AMERICA'S POULTRYMEN

Shown above are parts of the most important, useful advertisement your egg-producer customers will see during the next few months. And you'll find it the most effective selling tool you've ever had.

Good birds - Good feed Modern equipment and management

PLUS nf-180®

the Full Performance Ingredient

Even the best feed can't do the whole job. Good birds by themselves can't work miracles. Even better egg prices won't significantly improve profits in a poorly managed flock.

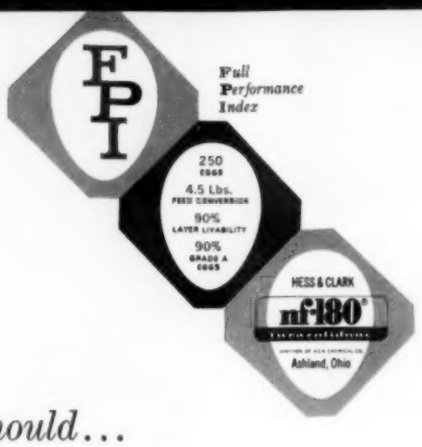
No one factor alone is the whole answer! Nor is nf-180 the whole answer. But there is ample proof that nf-180 is an important part of the total profit picture. Often it is the margin of difference between just good flock performance and reaching a Full Performance Index.

The reason is simple. Even the best-managed flock of birds can't produce up to its bred-in, fed-in potential if subclinical infections are sapping the birds of vigor and health. This constant disease drag is present in most every flock. nf-180 continuous low-level medication in the feed is the easiest, most effective way known to free birds of constant disease drag. In fact, top poultrymen like Ralph Manning rely on continuous low-level nf-180 medication to insure top flock performance year after year.

Many feed manufacturers now offer a low-level nf-180 medicated layer ration as part of their regular line. Where such feeds are not available, poultrymen are insisting their dealers custom-mix nf-180 in their layer feeds.

APPEARS IN THESE MAGAZINES

LEARN WHAT THIS BIG NEW PROGRAM MEANS TO YOU



Here's why you should...

make this your BIG

nf-180® the Full Potential Ingredient

BLUE BIRD
EGG MASH
Medicated
In laying hens, to increase egg production, improve feed-egg ratio, extend egg laying period, maintain greater laying performance during stress, improve hatchability and increase production in the early laying period, when fed as directed on the back of this tag.
ACTIVE DRUG INGREDIENT
Furazolidone (nf-180) . . 0.00275%
GUARANTEED ANALYSIS
Crude Protein, not less than 00.00%
Crude Fat, not less than . . 00.00%
Crude Fiber, not more than 00.00%
INGREDIENTS:
MANUFACTURED BY
COMPANY NAME
CITY STATE
100 lbs. net weight

ADD THESE CLAIMS TO YOUR FEED TAG WITH nf-180 AT THE 25-GRAM LEVEL

The sample tag at left shows the claims permitted for a feed medicated with the low-level of nf-180 (25 grams of furazolidone per ton of total ration). Every one of these claims is backed up by performance data obtained from carefully controlled laboratory experiments and farm feeding trials. nf-180 is permitted in the feed only because it is effective when used according to directions. (Remember, too, nf-180 is safe and nontoxic.)

Equally important to you is the way these benefit claims are endorsed by farm flock and commercial flock men who have used continuous nf-180 low-level feeding. Some of their statements appear below:

EARN CUSTOMER SATISFACTION LIKE THIS

"With good birds, good management and low-level nf-180, I just don't have any disease problems."

"I get better feed utilization by using nf-180, and that's dollars and cents in my pocket."

"We used to replace our hens every 14 months. Now on nf-180 I can keep them a month to 6 weeks longer."

"I figure nf-180 helps my layers through stress periods . . . keeps production from dropping."

"nf-180 gives me higher hatchability from my breeder flock . . . and I get paid on the basis of hatchability."

"Shortly after caging, my pullets were laying 20%. I tested one row of 418 birds with nf-180. In two weeks they went from 138 to 358 eggs per day. The birds that didn't get nf-180 didn't come up as fast and never did go as high."

Feed Promotion Idea in 1960

Here's how you can tie in with the **FPI** *program*

12-MINUTE SOUND FILM FOR YOUR FARMER MEETINGS

Shows poultrymen the importance of setting goals and keeping records to see if they're meeting these goals. Emphasizes importance of good birds, good management, good feed . . . explains how constant disease drag can reduce flock performance. Title: "The Margin of Difference." We'll furnish this sound-strip film without cost . . . ideal vehicle for telling your quality-feed story to poultrymen (excellent for sales and service training sessions, too).

SELLING AIDS AND MAILERS

"Figure-it-out-for-yourself" folder is an ideal tool for salesman to show how constant disease drag reduces the poultryman's profits. Profit Pointer dial shows how nf-180 can boost profits for any size flock, also gives nf-180 treatment levels for specific diseases.

NEW FLOCK PERFORMANCE INVENTORY CHART FOR BETTER RECORD KEEPING

First and only one of its kind! Makes it easy for poultrymen to check egg production, feed consumption, mortality, and salable Grade A eggs against FPI goals each month.

NEW nf-180 SERVICE CENTER

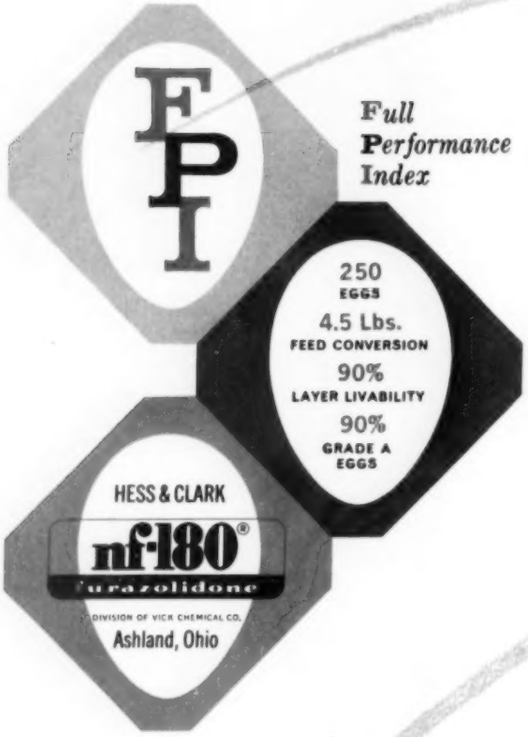
In addition to FPI layer rations, you'll want to use nf-180 for booster feeds, treatment of specific problems (broilers and turkeys, too), and to prevent and treat swine scours. Promote **every** nf-180 medicated-feed use and benefit with this new nf-180 Service Center. Designed for counter or wall use in your dealer showrooms. Contains literature pockets for nf-180 information.

COLORFUL DISPLAY POSTERS

King-size . . . explain FPI goals and spotlight benefits of FPI feeds. Featured center area is reserved for imprinting your own brand name and quality feed story.

FPI EMBLEMS

Reproductions of the three FPI emblems will be furnished for window and wall display. Ad mats of these emblems also are available for use in your layer ration ads. Sample radio spots and news stories will be supplied on request.



FPI...

newest industry-wide promotion idea from Hess & Clark

" 'Survival of the fittest' now takes on meaning as 'survival of the efficient,' " says one poultry expert. "The alert poultryman will want to review and analyze his poultry operation each year."

"What's the most important management practice? Set a goal!" says an extension poultryman. "Good management takes the 'luck' out of raising poultry."

This new industry-wide Full Performance Index promotion from Hess & Clark gives all factors (feed, birds, management) their proper emphasis . . . and gives your customers money-making self-improvement goals to shoot for.

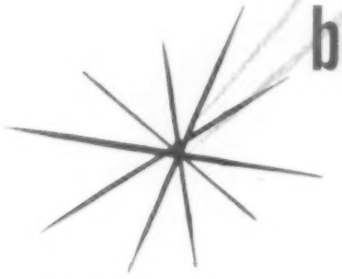
Full Performance Index gives you a sound, proven way to help your customers help themselves. *And as you help them prosper, you will prosper!*

Study all the details of FPI . . . look at how many ways it will help you create merchandising excitement . . . how many ways it will help you build tonnage . . . gain new customers. Then let's get together and work out your FPI program for 1960.

Golden Goodness of Eggs

launched by Hess & Clark last year, now well established

In line with Hess & Clark's policy of "first help the customer . . . then he'll help you," the now well-known Golden Goodness of Eggs promotion was launched just a year ago. Now it is well established as a nation-wide program designed to increase egg consumption and improve prices. (FPI works from the other end, helping poultrymen lower their production costs.) Like Golden Goodness of Eggs, the FPI program is destined to have major impact on your customers and the poultry industry as a whole.



both from Hess & Clark

. . . leaders in new products and ideas for the feed industry

Golden Goodness of Eggs and **Full Performance Index** are industry-wide promotions created by Hess & Clark to improve the profit position of every segment of the egg production industry.

HESS & CLARK
Ashland, Ohio

SYMPOSIUM

(Continued from page 58)

100-lb. lots. Most of these meals were prepared from menhaden. Staff members of the Bureau of Commercial Fisheries Laboratory at College Park were present at the commercial plants during the time each lot of meal was processed. About 24 menhaden fish meals were also prepared experimentally in a small pilot plant assembled from available machinery and operated under contract with a fish meal processing company. Many of these meals have been extensively tested by various chemical and biological methods in a number of research institutions throughout the country.

One of the most comprehensive evaluations of these meals was made at the poultry department of the University of Delaware. During 10 series of experiments about 180 separate samples of the fish meals were tested for comparative nutritive value by including a limited uniform amount of fish meal protein, in an otherwise complete practical broiler diet. All experimental diets, which were individually balanced with corn meal, soybean meal, bone meal, fat and methionine to formulate comparable diets containing 21.5% protein, .5% methionine and a calorie to protein ratio of 45. The diets were also balanced to contain 1.05% calcium and .66% phosphorus. Fish meal provided 3% protein or about 14% of the total protein. Two control diets, one containing a particular menhaden fish meal and the other an all vegetable protein diet were fed in each series.

Randomly selected day-old White Rock cockerels were allotted to groups and were fed the comparative diets containing the various samples of fish meals from the first day. The groups were housed in battery brooders for four weeks at which time the chicks were weighed and food consumption was recorded. The groups then were transferred to growing battery cages and were fed the same diets. Gain in weight and food consumed were determined at the end of 7 and 10 weeks. Each group consisted of three pens, each containing 10 birds, for a total of 30 birds.

The first five experiments included testing nearly 100 of the commercially produced meals and the 24 experimentally produced pilot plant meals. In each series, individual experimental diets were compared with all vegetable protein control diet. To permit these comparisons, a least significant range at the 5 and 1% level was determined for each control diet. In two out of five experiments, nearly all groups of chicks fed the diets containing fish meal gained significantly more weight and utilized the feed better than the group fed the vegetable control diet with no fish meal. In the other three experiments, only a few such differences were found.

Comparisons were also made between the experimental diets themselves by use of a multiple range test. In each series of experiments, differences were obtained but these were few.

Of the 100 meals tested in the first five experiments, the results from testing 81 commercial and pilot-plant meals were regrouped into 10 series to determine the effect of processing variables on the quality of the protein. The processing variables for the commercial meals were fresh and spoiled raw fish, steam and hot air dried scrap (which is unground meal), grinding and bagging before and after floor cure of the scrap. The processing variables for the pilot-plant meals were fresh and spoiled raw material. All pilot-plant meals were hot-air dried, quite rapidly, and mostly under-cooked because of an inefficient steam cooker.

Under the conditions of this experiment, only results obtained from feeding diets containing meals processed in the pilot-plant were statistically different from the others. This difference was only at the 5% level of significance. Quality of protein was equal for the commercially processed meals—no matter if steam or hot air cylindrical dryers were used in processing, or if meals were made from fresh or spoiled menhaden, or if meals were sampled before or after curing in a pile.

Five more experimental series were conducted at the University of Delaware. About 80 more samples of commercially prepared meals were screened by the same procedure used previously. Statistical analyses indicate that no results were obtained

Jacobson QUALITY FEED MILL EQUIPMENT

JACOBSON MACHINE WORKS, INC.
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MINERAL STABLE D_2 AND D_3
Wisconsin Alumni Research Foundation — Approved for VITAMIN D upon periodic tests

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Mineral Stable (D2 and D3 dry powders)
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High or low potency and economical intermediate types for every food, feed and pharmaceutical use.
Protocols with all shipments—potency guaranteed U.S.P.

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World's Largest Manufacturers of Vitamin D

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CHARLES BOWMAN & CO.
220 East 42nd St., New York 17, N. Y.

For low-cost gains... and fewer runts,
be sure to check the effectiveness of
Arsanilic Acid in all of your swine feeds.

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OPTIONAL, LOW-PRICED FLOOR-ABOVE SCREEN CHANGER

for cost-saving, high tonnage output, you just can't beat this rugged machine

CUTS GRINDING COSTS: Patented eccentric lock enables instant change of ¼" thick screens while mill is running. No extra power consumed by starting and stopping. Exclusive 10-edge adjustable hammers last longer.

INCREASES OUTPUT: Unusually large feed opening with extra high throat handles hay and other bulky materials, as well as small grains, with ease. Heavy six-blade fan provides maximum mill capacity.

BUILT FOR HEAVY DUTY: Rugged, welded-steel plate construction stands the gaff. Extra heavy heat treated alloy steel driveshaft supported by oversize, self-aligning, dustproof bearings.

SAVES SPACE: Compact design free from auxiliary shafts, pulleys, belts. Neither crusher-feeder nor hopper installation interferes with placement of mill against a wall or in a tight corner.

FREE: New Bulletin No. 10 with complete data.

SCHUTTE PULVERIZER CO., INC.
872 BAILEY AVENUE, BUFFALO 6, N. Y.

that are contrary to findings of the previously conducted series of tests. In addition, growth data from the 10 series of experiments did not correlate with catch data and proximate analysis of all authentic samples of fish meal, or with the chemical identity of the compounds composing the Kjeldahl nitrogen fraction of 69 selected samples of meal.

So with this method of testing only a few differences in quality of protein of fish meals were obtained and none could be correlated with commercial variables of processing. On the basis of this work, we can conclude most likely that for all practical purposes, fish meals of normal commercial production are a more reliable, more constant source of supplemental animal protein than we perhaps thought previously.

USE OF FISH OIL FRACTIONS IN REDUCING ELEVATED BLOOD-CHOLESTEROL LEVELS—Dr. James Peifer—The residual oils found in fish meals have traditionally been valued only as a source of energy. The possible nutritional contributions of these oils have been largely disregarded. Recent research findings on the efficacy of fish oils in reducing elevated blood cholesterol levels have impelled a basic reconsideration of the possible contributions of these residual oils to the over-all nutritive value of the formulated animal feed. Menhaden and tuna oils were used in the study reported upon herein. The research results also point to the possibility of a totally new market for the extracted fish oils, now largely exported for use in the manufacture of margarine.

Many recent reports have indicated the possibly beneficial physiological effects attendant upon reductions of elevated blood-cholesterol by adjustment of dietary fat intake. The key point of the reports has been the desirability of attaining a better balance of saturated and unsaturated fatty acids in the diet of the American consumer. The fatty acid of choice, to date, has been linoleic acid, present in relatively large quantities in corn and safflower oils. The effective principle in linoleic acid appears to be related to its two points of unsaturation.

More current reports have indicated that the efficiency of a fatty acid in reducing blood-cholesterol levels is a direct function of its degree of unsaturation rather than of its essential (vitamin-like) fatty acid activity. Inasmuch as fish oils form a rich source of extremely unsaturated fatty acids, these oils were investigated as possibly effective depressant agents. Research studies indicated that both the fish oils and the individual fish oil fatty acids were considerably more effective in reducing blood-cholestereol levels than was the case with linoleic acid. Further, reductions were almost immediately observed upon administration of the fish oil triglycerides while linoleic acid required approximately two weeks before an observable and significant cholesterol-depressant activity was observed. Finally, the research demonstrated conclusively that there is some form of direct relationship between the degree of unsaturation (iodine value) and the degree of cholesterol reduction. The more unsaturated the fatty acid fraction, the more efficient was the fatty acid in its functions.

Most fish oils contain 20-30% saturated fatty acids and 70-80% unsaturated. At first consideration, this may appear to be less unsaturation than in common vegetable oils (e.g., corn oil, which contains 85% unsaturated vs. 15% saturated fatty acids.) The place where fish oils are outstanding is in the large proportion of highly unsaturated fatty acids. Thus, about half of the 70-80% of the unsaturated fatty acids of fish oils contain three, four, five or six double bonds, whereas corn oil contains only one or two double bonded fatty acids. Usually 20% or more of the total fatty acids of a fish oil have five or six double bonds.

Since it is the total unsaturation (which is proportional to the number of double bonds present) which governs the cholesterol depressant effect of an oil, the fish oils have a much higher potential action in this respect than do the vegetable oils.

The long-chain (20-22 carbon atoms), extremely unsaturated (four, five or six points of unsaturation per molecule) fatty acids derived from fish oil appear to offer a most effective means of adjusting cholesterol levels in the blood with a minimum of caloric intake. Several proposed special diets have involved the ingestion of 1 oz. of corn oil from two to three times daily or the substitution, at the cost of relatively great preparative effort, of unsaturated fatty acids in the usual diet of the American citizen. The substitution of highly efficient, encapsulated fish oil fatty acid fractions would permit a much smaller and much more palatable dosage and perhaps permit a less restrictive dietary regimen.

In summary, the following characteristics of fish oil fatty acids appear to justify their use and the use of fishery products, in general, in clinical research and treatment of persons suffering from the effects of elevated blood-cholesterol levels:

(1) Greater effectiveness in reducing blood-cholesterol levels than agents or oils now in use.

(2) Immediate effectiveness as compared with delayed effectiveness of other products now in use.

(3) Encapsulated concentrates of highly unsaturated fatty acid fractions form a much more palatable method of treatment at minimum additional caloric intake and with lessened danger of further strain upon the fatty acid metabolic system.

(4) When prepared under properly controlled processing conditions, problems of possible toxicities appear to be of a negligible order.

The fine turnout (even amid a snowstorm) and the enthusiastic response of the audience to this second of a series of symposiums has stimulated interest for the National Fisheries Institute to hold these symposiums annually. All interested in attending next year's program are invited to do so. The program will be held the day prior to the Maryland Nutrition Conference as was done previously to facilitate attendance.

Nopco Earnings Down

NEWARK, N.J.—Nopco Chemical Co., Newark, reports that although sales in the first quarter of 1960 were higher than the corresponding 1959 period, earnings were lower.

Contributing factors in this situation, according to G. G. Stier, president, were increased development costs in all the company's divisions, and lowered sales prices in certain segments of the fine chemicals and plastics divisions.

He reported sales for the period of $10,144,249 and net income at $419,884, or 39¢ a share on 1,067,053 common shares outstanding. This compares with sales of $8,038,424 and net income of $484,271, or 45¢ a share on 1,047,763 shares outstanding in the 1959 period.

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SERVICE
Ray Ewing
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BEFORE THE NAME GOES ON

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The Leo Cook Co.
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A DOWN-TO-EARTH REASON SOLULAC IS ALWAYS YOUR MOST ECONOMICAL SOURCE OF UNIDENTIFIED GROWTH FACTORS

. . . is the result of modern, low cost production methods used at Grain Processing's plant

This production makes possible a continuous, economical supply of SOLULAC . . . your best source of unidentified growth factors so vital in the feeds you produce. SOLULAC is a better nutrient because it's a fermentation product from corn. It's recommended by the same leading nutritionists who have cautioned you that "slimming up" on unidentified growth factors can only produce poor results.* Remember, feed sales follow feedlot performance! So, it will pay you to keep SOLULAC in your feed formulas. Don't be misled by cheaper *or* more expensive substitutes . . . insist on *free flowing* SOLULAC! Available in 50 and 100 lb. bags or bulk carloads.

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AND 44 OTHER FEEDS

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Patents Issued by U.S. Patent Office

2,929,711

Animal Alimentation: Product and Process of Using the Same. Patent issued March 22, 1960, to Evan L. Robert Stokstad, Pearl River, N.Y., and Edward Clarence de Renzo, Rutherford, N.J., assignors to American Cyanamid Co., New York. A composition of matter for alimentation of animals comprising animal feed mixed with at least 1 milligram and not more than 100 grams per kilogram of feed of viridogrisein and griseoviridin.

2,929,712

Animal Feed Composition. Patent issued March 22, 1960, to William Pitner Johnson, Pennington, N.J., and Ralph Francis Elliott, Nanuet, N.Y., assignors to American Cyanamid Co., New York. An animal feed composition effective in accelerating the growth rate of animals comprising in a minor but effective amount in combination about 5.0 to 50 parts by weight of a tetracycline antibiotic, 0.1 to 8 parts by weight of an estrogenic substance, and about 100 to 400 parts by weight of phenothiazine, and in a major amount an edible animal feedstuff.

2,930,695

Animal Feed Supplement: Patent issued March 29, 1960, to Lawrence Rosner and Raymond O. Foster, Chicago, Ill., assignors to Rosner-Hixson Laboratories, Inc., Chicago. Application made Feb. 23, 1956. An innocuous water soluble gel, in dry powder form suitable for incorporation in animal feeds, comprising an estrogen dispersed in a natural colloidal material and plasticized with an innocuous polyhydroxy organic substance, the concentratrion of estrogen being not greater than about 1% by weight of the dry powdered product.

2,932,571

Flavored Sweetener for Livestock Feed Products. Patent issued April 12, 1960, to Talmadge B. Tribble, Glenview, Ill. Application made Jan. 17, 1958. A flavored livestock feed comprising livestock feed and a mixture combined therewith, said mixture comprising concentrated sweetener and livestock feed flavoring, in the proportions of from about 1 to about 99.95% by weight of concentrated sweetener and from about .05 to about 99% by weight of livestock feed flavoring.

2,932,605

Coccidiosis Treatment with 4-Bromo-4'-nitrocarbanilide. Patent issued April 12, 1960, to Walter Hepworth, Manchester, England, assignor to Imperial Chemical Industries, Limited, London, England, a corporation of Great Britain. Application made Dec. 17, 1956. A composition useful against coccidiosis comprising an animal feedstuff containing 4-bromo-4'-nitrocarbanilide.

2,930,733

Control of Hog Ascarid Infections with Nicarbazin. Patent issued March 29, 1960, to Gerald Brody, Quincy, Ill., assignor to Moorman Manufacturing Co., Quincy, Ill., a corporation of Illinois. Application made Dec. 23, 1957. The method of controlling hog ascarid infections which comprises continuously feeding swine with a ration containing from about .0025% to .01% by weight of nicarbazin.

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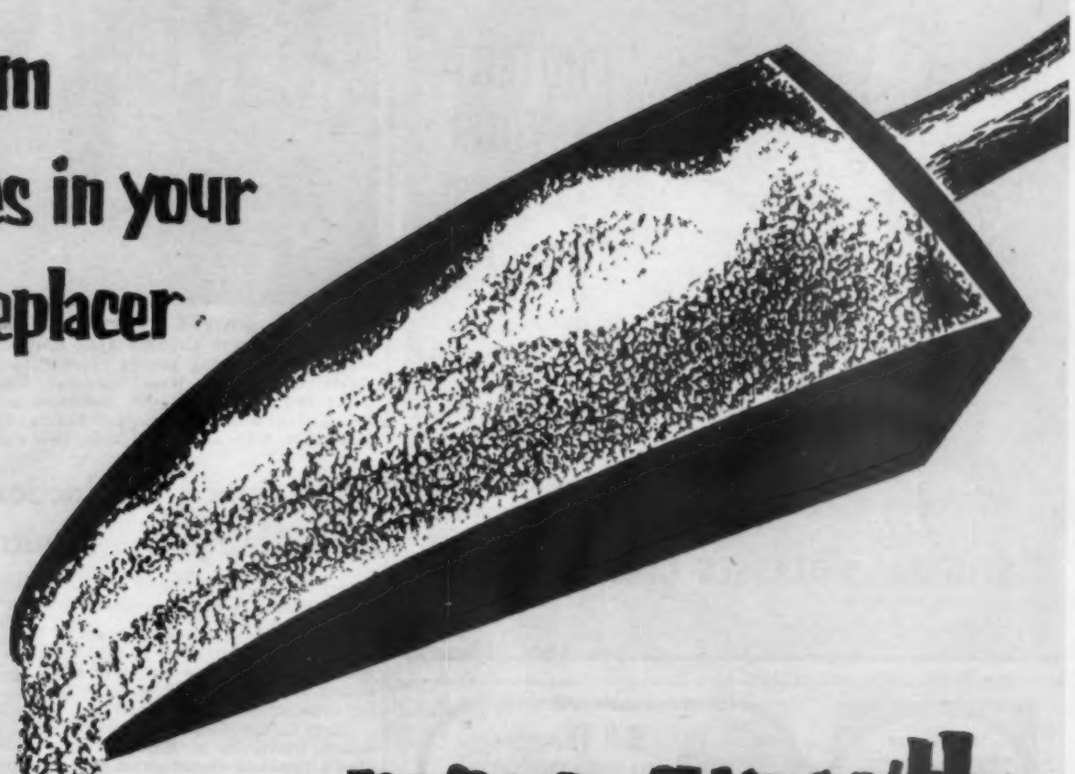

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POULTRY GROWERS PANEL—These men were on a panel at the New Hampshire Poultry Growers Assn. convention discussing "Practical Experiences with Crowding Laying Flocks." In on the discussions were (left to right): George Aro, West Townsend, Mass.; Edward Rollins, Contoocook, N.H.; Harry Whelden, Jr., extension poultryman, University of Maine; Dr. George Godfrey, Honegger Farms, Forrest, Ill.; Rodney G. Webster, Claremont, N.H., and Frank True, East Corinth, Maine.

Floor Space, Production Costs Among New Hampshire Poultry Meeting Topics

BY RICHARD WARREN
University of New Hampshire

DURHAM, N.H. — Floor space, costs of production, Cocci Vac and the National Stabilization Act were discussed at the New Hampshire Poultry Growers Assn. spring meeting.

Harry C. Wheldon, Jr., poultry specialist, University of Maine, moderated a two-hour discussion on "Practical Experience with Crowding Laying Flocks." He brought out that frequently new equipment is put in the field before there is much research on how it will work out.

The only point on which all the panel members seemed to agree was that floor space for layers can satisfactorily be reduced, and that a well-insulated house with mechanical ventilation is necessary to reduce the floor space and labor for laying flocks. On slat floors, pit cleaners, rollaway nests and type of house there was little agreement. These have resulted in many unforeseen problems.

Dr. George Godfrey, Honegger Farms, Forrest, Ill., presented data on tests comparing an all-slat floor to a central pit. The results favored the central pit with litter. He recommended a pit covering 70% of the floor area with the feed and water over it. With this, floor space could be reduced to 1½ sq. ft. for leghorns. He didn't recommend a pit cleaner or belt egg gatherer.

Rodney Webster, Claremont, N.H., has reduced the housing space for leghorns to 1½ sq. ft. without adding any expensive equipment, other than mechanical ventilation. His production results and litter conditions are very satisfactory.

Edward Rollins, Contoocook, N.H., has reduced the housing space for heavies to 2 sq. ft. per bird, and is planning to go to 1½ sq. ft. next year. Besides mechanical ventilation he has a pit cleaner. The roosts and water are over the pit. He only cleans the pit every six to eight weeks and can clean all the litter out by pushing it into the pit.

Frank True, East Corinth, Me., has a completely "automatic" house except for egg gathering. That is done from rollaway nests in a central aisle. His house has a complete slat floor, and handles 11,000 layers. He has both heavies and leghorns. This is the first year he has used this house, and production hasn't been satisfactory. This, he feels, can be corrected. It takes less than one hour a day per 1000 layers to tend to the birds in this house, he stated.

George Aro, West Townsend, Mass., has an "automatic" house with a belt egg gatherer. He is satisfied with many of the features, but the pit cleaner hasn't been satisfactory, and he still has problems to work out on the egg belt.

Opposes Controls

J. P. Weston, Bennington, the association vice president and chairman of a special legislation committee, reported that the committee was split on whether some type of poultry legislation to control the industry was needed or not. His own views were opposed to any government programs or controls. He did feel there should be some further checking into grain company activities by anti-trust investigators, and that promotion should be given more emphasis.

James Timberlake, Westford, Mass., executive secretary of the Quality Egg Council, reported that there had been several unforeseen problems in getting the New England seal of quality going, but that these were being met.

George Kittredge, agricultural promotion assistant, New Hampshire Planning and Development Commission, was praised by Robert Horsburgh, association president, for his very effective work in connection with March Egg Month.

The National Poultry Stabilization Act was discussed by Philip Seidel, Ghent, N.Y., director of the U.S. Poultry & Egg Assn., who substituted for Jerome Taub, who was unable to attend because of illness.

Dr. George J. Christie, of Eastern States Farmers Exchange, West Springfield, Mass., discussed "Field Experiences with Coccidiosis Vaccine." This vaccine that has been used extensively in this area for over a year, differs from other vaccination programs, he said. It is necessary to have about four cycles of the coccidiosis before immunity is built up. This cycling requires the proper temperature and humidity. Where the litter is real dry, he recommended sprinkling it on the seventh to 14th day, to allow these cycles to develop. Other suggestions were to use the proper coccidiostat, not give the chicks too much room while the vaccine is taking and not to vaccinate weak or sick chicks.

Dr. George Godfrey, discussed the "Cost of Producing Eggs in the Midwest." He had a number of figures

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Operating on that creed, Picks Feed and Hatchery has added substantially to farm income in the Pinckneyville area. The service center has influenced the expansion of the dairying. "Pig Parlors" have been introduced to add new efficiency to pork production. Commercial eggs and hatching eggs have become important income to farming of the area, largely because of Picks service.

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Al Bathon, with the bulk truck, and Valie Marlow, the mill man, perform two important services that Picks Feed and Hatchery offers to farmers. Picks' services are planned to meet the farmers' needs.

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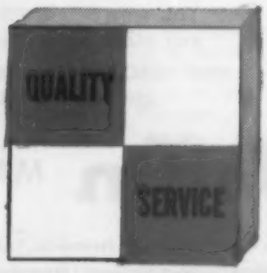
"We've been customers of Picks ever since they've been in business," says Robert Templeton, who brought in a load of corn to be Check-R-Mixed as a beef cattle ration.



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from colleges and commercial farms showing a wide range in costs. These varied from about 25¢ to 35¢ a dozen. Even on the same farm, costs vary greatly between flocks, he brought out.

Harry Wheldon spoke on "Cost of Producing Eggs in New England." He also brought out that there is a great variation in costs between farms. Budgets by college people and others also show a great variation, depending a lot on the production level assumed or attained. Slight changes in the production level can greatly affect the cost figures. His figures varied from about 30-45 cents a dozen. "It's not what it costs others . . . but your own costs that count," he contended.

Robert Horsburgh, Fremont, the association president, presided at the meeting. Exhibits showing the poultry research being conducted at the UNH were set up in the Memorial Union where the meeting was held. These illustrated laboratory techniques used in diagnosing disease

"Where do you want it, Boss?"

troubles, research results on lighting systems, studies on the inheritance of plumage color, tissue culture and rations used in studying the niacin requirements of laying hens. These exhibits attracted a lot of interest. Also many of those who attended visited the New Hampshire broiler test. The test birds were seven weeks old at the time of the meeting.

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F. W. Weaver Joins Grace Chemical Staff

MEMPHIS, TENN. — F. Wayne Weaver has joined the sales staff of the Memphis district of W. R. Grace & Co., Grace Chemical Division, it was announced by J. W. Floyd, district sales manager.

F. W. Weaver

Mr. Weaver will make his home in Pine Bluff, Ark. He will cover the trade in Arkansas, Louisiana and Oklahoma, selling feed urea and other Grace Chemical Division products.

Mr. Weaver formerly sold fertilizer materials for Phillips Petroleum Co. Prior to that, he was plant manager and salesman for Tennessee Liquefied Gas Co. He is a graduate of Oklahoma A&M.

Hatchery Purchased By Penobscot Poultry

BELFAST, MAINE—A. I. Savitz, Belfast, president of the Penobscot Poultry Company, Inc. and G. E. Constable, president of Constable Hatchery, Inc., announce the purchase by Penobscot Poultry of Hatchery No. 1, the largest hatchery in Maine.

Penobscot Poultry has for many years worked with the Constable Hatchery, Inc., in connection with the development of its "Cacklebird" product. The acquisition of the new hatchery, officials said, assures the continuation and development of this nationally famous product. The Constable Hatchery will continue to be connected with the operation of the hatchery and Penobscot Poultry Co., Inc.

GRAIN CLEANING, STORAGE

BIGGS, CAL. — Theodore and Velma Bronner II, and A. and Theodore D. Bronner, have incorporated a grain cleaning and storage company to be known as Bronner and Sons. Capital of the new concern is $150,000.

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Palmitate This is an inherently more stable form of vitamin A. It resists the effects of heat, moisture, and long storage. Testing vitamin A palmitate and the other commercial ester, vitamin A acetate, in stored feeds and premixes, we typically find 25% or better stability for the palmitate than for the acetate.

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No. 7935—Tractor Shovels

Series B models of the H-70 and H-90 "Payloader" tractor-shovels "offer numerous improvements which increase production and better the performance of these four-wheel-drive units," according to the manufacturer, the Frank G. Hough Co. While operating capacity of the H-90 series B unit remains at 9,000 lb., the peak lift has been increased to 18,000 lb. This model now has a longer wheelbase and wider tread, along with greater machine weight. Additional

power is provided by a new Cummins Turbo-charged diesel engine which develops 162 h.p. at 2,100 rpm. A GMC diesel, which develops 153 h.p. at 2,200 rpm. is offered as an option. Major improvements in the full power-shift transmission and the torque-converter have been made, according to the manufacturer. The standard tire size of the H-90 series B machine has been increased and the front axle, main frame and other structural parts have been strengthened. New air brakes are standard on the H-90 and both the H-90 and the H-70 series B units have the dual foot brake pedals. The H-70 retains the same recommended operating capacity of 7,000 lb., but the peak lift has been increased to 13,000 lb. Improvements have been made in the boom arm design and bucket control linkage. More power is provided by a larger Cummins diesel engine with optional power including an IHC gas engine and a GMC diesel. The capacity of the hydraulic reservoir has been increased. For details, check No. 7935 on the coupon and mail.

No. 7938—Pneumatic Conveyor Report

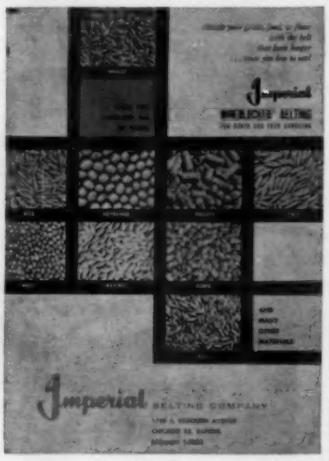
An eight-page report on "Selection and Use of Pneumatic Conveyors," by Howard S. Sayre, manager, General Conveying Division, is being offered by Fuller Co. Special sections discuss what the three basic systems are, the basic elements of each system, various component parts, types of conveying lines, valves, indicators and controls. Also discussed are such matters as where to use pneumatic systems, what their advantages are and the relative costs for investment, power and mechanical maintenance. Copies of the report may be obtained by checking No. 7938 on coupon and mailing.

No. 7936—Phosphorus Nutrition Booklet

A new 40-page booklet, "Trends in Phosphorus," has recently been released by the Smith-Douglass Co. Containing 10 analyses of phosphorus nutrition, it is written by recognized experiment station authorities and edited by Dr. Spencer H. Morrison, director of Agricon, a feed industry consulting firm. The booklet is introduced by Smith-Douglass feed phosphorus sales manager Henry Highton. It contains articles on trends in phosphorus for swine by Dr. W. M. Beeson, Purdue University; for laying hens by Dr. H. R. Bird, University of Wisconsin; for turkeys, ducks, geese, pheasants and quail by Dr. P. E. Waibel, University of Minnesota; for broilers by Dr. H. L. Fuller, University of Georgia; for beef cattle and sheep by Dr. B. R. Taylor and Dr. F. Hubbert, Jr., University of Arizona; for dairy cattle by Dr. J. K. Loosli, Cornell University, and for pets by Dr. P. J. Schaible, Michigan State University. A summary of the entire booklet by Dr. Morrison, with an analysis of the future outlook for phosphorus trends, is the final article. It is copyrighted by Smith-Douglass. For copies, check No. 7936 on the coupon and mail.

No. 7942—Booklet on Belting

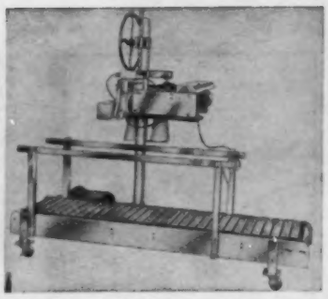
A new brochure, with complete information on eight different brands of innerlocked belting for elevating and conveying grain, feed, or flour has been released by Imperial Belting Co. The booklet shows the brand of belting recommended for best value



and performance in the varying types of elevating and conveying services. Information is also given on the correct method of punching elevator belts, ply requirements for bucket projection, washers, and special fasteners designed for smooth joining and long-life operation. Copies of the booklet are free, so just check No. 7942 on the coupon and mail.

No. 7941—Bag Closing Machine

The Minneapolis Sewing Machine Co. recently introduced an automatic bag closing machine, conveyor Model ASC-100. Once the bag is filled, it is automatically conveyed through the bag feeder, where it trips the automatic starter for the sewing head. After the bag is sewn, the sewing head stops automatically. Threads are cut both front and back of the closure by the automatic thread clipper. The machine effects a saving in time and labor and eliminates excessive thread waste and wear on the sewing head, report company officials. The unit is 7 ft. long, 5 ft., 6 in. high and



29 in. wide. The conveyor has a speed of 32 ft. per min. The conveyor is mounted on castors for easy portability. The conveyor model is also available without the automatic attachments for those preferring manual operation. Minneapolis automatic attachments can be adapted to any Minneapolis conveyor model now in use. For more information, check No. 7941 on the coupon and mail.

No. 7940—Air Operated Slide Valve

Remote control of feed and grain mill operation through the use of a newly-developed air-operated slide valve is claimed by the manufacturer, Shelby Manufacturing Co. The valve, designed to fit any conveying system, "assures positive flow control or discharge at any point where automatic shut-off is required," Shelby officials say. Electronic control combinations for the valve operate on 110V-60 cycle single phase current. In addition

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MINNEAPOLIS, MINN.

BUSINESS REPLY ENVELOPE
No postage stamp necessary if mailed in the United States

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Feedstuffs

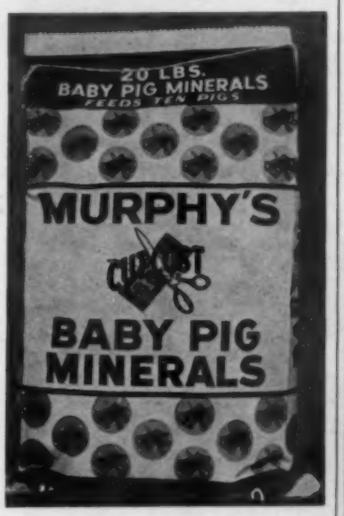
P. O. Box 67

Reader Service Dept. Minneapolis 40, Minn.

to standard control, any number of control stations can be connected into a system for operations requiring multiple valve control. For more information about this slide valve, check No. 7940 on the coupon and mail.

No. 7939—Pig Mineral Product

A new mineral product which combats pig anemia has been announced by Murphy Products Co. The new product, which pigs eat at a very early age, provides supplemental iron, certain other minerals deficient in sows' milk and vitamins. The product, "Baby Pig Minerals," is a blend of more than 20 nutrient substances that little pigs need during their first



few weeks of life. The company said that especially important is the addition of extra high levels of blood-building minerals—such as iron, copper and cobalt—along with vitamin B_{12}. Other ingredients are included to increase palatability. The manufacturer recommends that the mineral be placed in the creep area immediately after farrowing. The mineral is to be fed until weaning. For more information, check No. 7939 on the coupon and mail.

No. 7943—Storage Structures

A compact information bulletin on modern storage structures has been announced by Sprout, Waldron & Co., Inc. This bulletin, 207-A, covers a variety of designs for efficient and safe storage of animal feeds, flour, food, chemical and industrial products. Illustrations include bolted steel storage structures, square type storage tanks, live bottom storage bins and a variety of special bins for specific applications. Tabulated data giving diameters, heights and capacities for a number of storage structures also are included. For copies, check No. 7943 on the coupon and mail.

No. 7937—Bug Rope

A new Bug Rope developed by H. T. McGill is designed for positive checking on insect kills from fumigation of stored grain. The Bug Rope is a hollow-core braided polyethylene rope which will hold small cylindrical insect cages at any desired intervals. The rope with the insect cages is pushed into the grain mass with a metal probe rod. The metal tip of the rope also contains an insect cage for bottom-of-the-bin testing. Once the rope is inserted in the grain, the probe rod is withdrawn for setting

DEHYDRATED
and
SUN-CURED
ALFALFA MEAL
Pellets • Crumbles
Bagged • Bulk
THE A. B. CAPLE CO.
Toledo 5, Ohio

Strong Scott

"To provide . . .

TOP CUSTOM MILLING SERVICE YOU NEED THE BEST EQUIPMENT

That's one reason we rely on STRONG-SCOTT," says Willis Sauder, owner of Sauder's Feed Service, Tremont, Illinois.

Willis Sauder (above), owner of Sauder's Feed Service, operates the new mill in the foreground, plus the old mill and the modern feed store.

The Strong-Scott Quick-Change Hammermill operates with 60 HP on the mill and is equipped with a Strong-Scott Feeder-Magnetic-Separator.

A 2 ton (44 x 12) Triple Action Mixer, with facilities for adding molasses, has double air operated gates for fast discharge into a surge bin.

A Strong-Scott 48-inch Power-Flo Separator is used to size pellets and crumbles. A 24-inch Power-Flo is used for scalping incoming ingredients.

In March of 1958, Sauder's Feed Service built a new 21,000 square ft. plant for custom milling. "We were out-growing the old mill, where we could handle only five ton at a time," says Willis, "so we contacted *Hogenson Construction Co.* of Minneapolis to build us an efficient mill with plenty of capacity.

"Our new plant is a push-button, batch-mixing mill and includes storage capacity of 500 tons."

In addition to custom milling, Sauder produces enough brand feeds to keep his 3 bulk trucks busy. "As you can imagine, this puts quite a strain on our mixing and grinding equipment, but the efficiency of our Strong-Scott Hammermill and Triple Action Mixer gives us the capacity we need and a finished product our customers like," added Willis.

THE **BIG YEAR** FOR NEW EQUIPMENT

The Strong Scott Mfg. Co.

451 Taft Street, N.E.
Minneapolis 13, Minnesota

I would like more information on:
☐ Hammermill ☐ Mixer ☐ Power-Flo Separator
☐ Feeder Magnetic Separator

Firm Name:_____
Title:_____
Address:_____
Signed:_____

Dept. TI-60

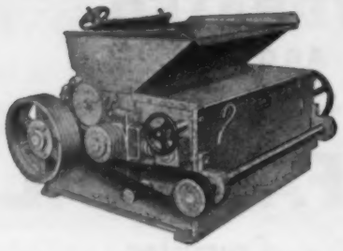
CAFNECTAR®
Sweet Cow Milk Flavor

. . . Eases calves into milk replacers and starter feeds after colostrum. Gets them from bag to bucket to bunk faster.

® Trademark

For Complete Information Write:
FLAVOR CORPORATION OF AMERICA
3037 N. Clark St., Chicago 14, Ill.

WHAT DO YOU LOOK FOR IN A ROLLER MILL?



PERFORMANCE?
QUALITY?
PRICE?

YOU'LL FIND ALL THREE IN A W-W!

W-W Grain Roller Mills process all types of grain to give you better feed! They're built for rugged service—with a solid rustproof cast-iron frame . . . special long-wearing chilled-cast "mill type" rolls hardened through entire wall . . . and precision single-control wheel adjustment. W-W rolls don't clash when running empty. Saves extra wear! W-W's convenient low-cost Roller Exchange regrooving service saves you money. See it, compare—and you'll choose a W-W! Sizes from 6" to 36" widths. Adaptable to any source of power. See prices below!

Model	Roll Size	H.P.	Price Only*
706-S	10"x 6"	1	$ 189.50
712-S	10"x12"	3	450.00
718-S	10"x18"	7½	580.00
824-S	10"x24"	10	773.00
830-S	10"x30"	15	1,080.00
836-S	10"x36"	20	1,440.00

*Prices f.o.b. Wichita. Easy terms available. Write for free literature and prices on W-W Roller Mills. Ask about liberal terms and time-payment plan.

W-W GRINDER CORP. DEPT. 311 2957 NORTH MARKET WICHITA 4, KANSAS

CHECKERBOARD GRAIN COMPANY
Buyers and Sellers of
MILLFEEDS, GRAINS AND GRAIN PRODUCTS
CHICAGO KANSAS CITY ST. LOUIS MINNEAPOLIS

IT PAYS...
to supplement feeds with
MIXING MANAMAR

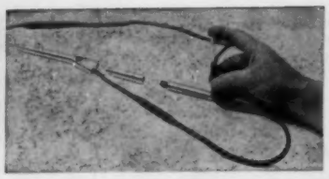
A ONE PACKAGE DEAL

Simplifies Inventory — You can make your poultry and swine feeds with one source of fortification.
Easy to Mix — A large enough package so that no premixing is needed.
Formula Service — Modern formulas to fill your individual needs.
Laboratory Service Upon Request.
ManAmar feeds get repeat sales that increase net profit.
ManAmar field results, not "company" research data, sell your ManAmar-enriched feed.

MANAMAR CONTAINS THE FOLLOWING "SEA POWERED" INGREDIENTS:
Condensed West Coast Fish Solubles.
Dehydrated Pacific Ocean Kelp.
Fish Glandular and Liver Hydrolysate.
Dried Fish Solubles Precipitate.
Fish Meal.

Dept. F

PHILIP R. PARK, INC.
FEED ENGINEERS
Manufacturers of MANAMAR "Sea Power" Supplements
Berth 42 Outer Harbor, San Pedro, Calif.



the next rope. A single probe rod can be used to set any number of bug ropes. Previously, many probe rods, each containing insect cages had to be left in the grain during fumigation, Mr. McGill says. This raised the cost of thorough checking to the point where it was practical only in research operations, he said. All metal parts of the Bug Rope are nickel plated to reduce friction. Probe rods can be joined in various lengths to allow working under low ceilings. The Bug Rope is sold in kit form, customized to meet the specific needs of any customer. For details, check No. 7937 on the coupon and mail.

No. 7944—Portable Feed Pelleter

A new portable feed pelleter, designed to fill the need for intermediate equipment in the making of pelleted feeds, has been announced by The Superior Co. The machine is described as having a production capacity up to 750 lb. per hour, yet "the cost is reasonable and it does not require complicated bins, steamers, mixers and feeders," says H. A. Pyzdrowski, manager. The cold cubing principle is used to produce pellets from dry meal mixtures — without steam. However, in those areas where basic feed ingredients are likely to have an extremely low moisture content, the equipment can be fitted with a cold water drip-feed assembly to supply the binder needed. Three men can pick it up, move it anywhere inside a building or load it into a pick-

up truck, says Mr. Pyzdrowski. The firm predicts that many feed mills will use it as a supplemental machine for short orders. In normal production, the machine can be fitted with a simple hopper for hand feeding, or it can be installed under an overhead gravity bin for volume feeding. A feed metering device is an integrated part of the pelleter and can be set for any desired capacity. Seven sizes of pellet dies are available with the machine, ranging from 3/32 in. to 5/8 in. Die ring life expectancy is calculated at 350-750 tons of pellets each, depending on the type of ingredients pelleted. The machine was developed originally by an English firm, the Templewood-Hawksley group. The Superior Co. has exclusive marketing rights in the U.S. and Canada on this pelleter which is called the Superior-Templewood Portable Pelletizer. The machine is driven by a 7½ h.p. direct coupled motor which can be plugged into any standard 220-volt farm or industrial power outlet. Height is 5 ft., 9 in., and it weighs 725 lb. Cost of the basic machine is $1,385 f.o.b. Hopkins. For complete details, check No. 7944 on the coupon and mail.

Also Available

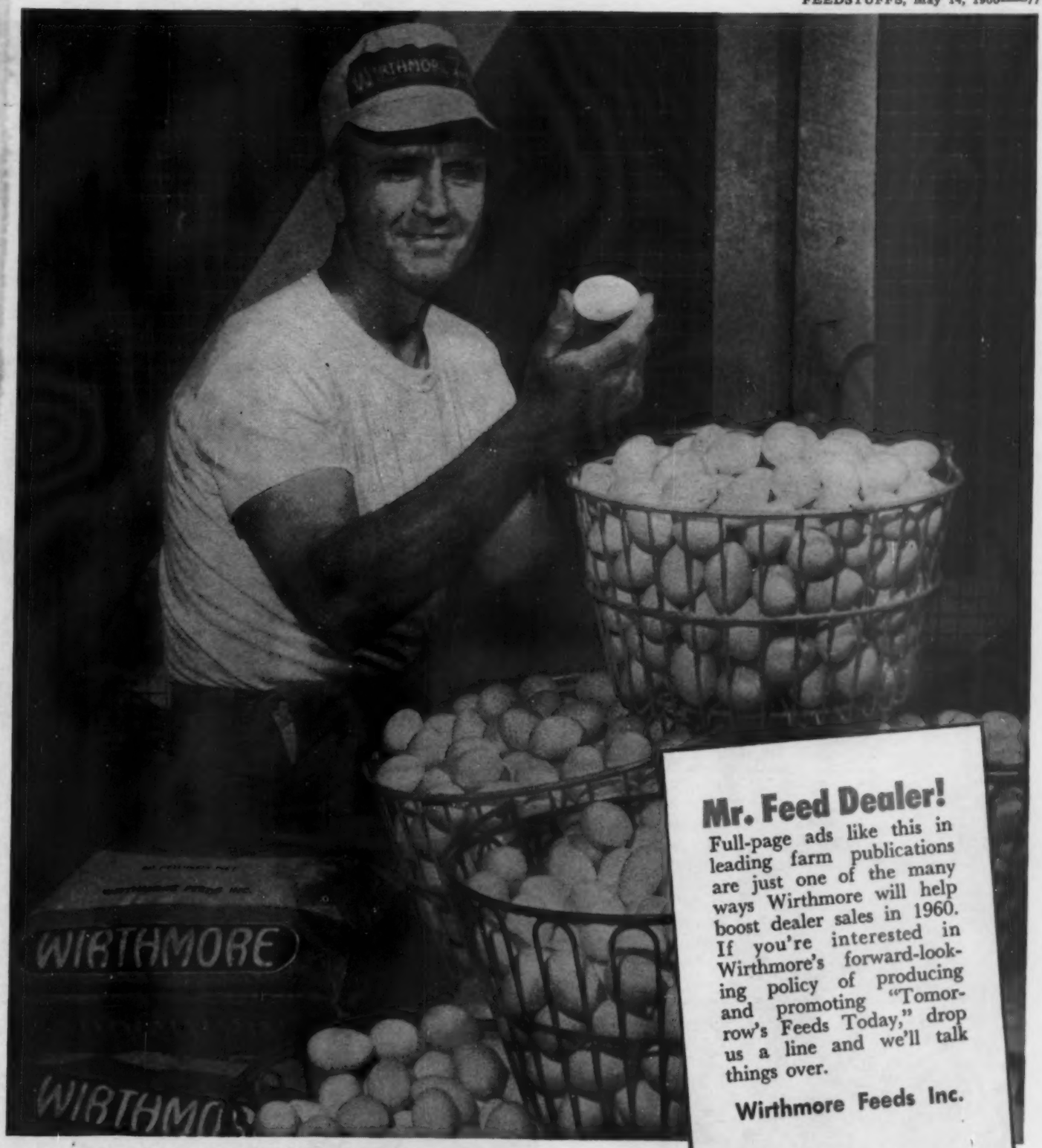
The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number of the coupon and forwarding it to Feedstuffs.

No. 7884 — Bulk handling folder, Link-Belt Co.
No. 7903 — Inhalation product, Whitmoyer Laboratories, Inc.
No. 7904—Locking wedge mount, Martin Engineering Co.
No. 7905—Redesigned motors, Lima Electric Motors Co., Inc.
No. 7906—Layer management book, Colonial Poultry Farms, Inc.
No. 7907 — Conveyor book, Link-Belt Co.
No. 7908 — Swine management booklet, Merck & Co., Inc.
No. 7909—Animal health product, Hilltop Laboratories.
No. 7910—Southern farmer promotion, Chas. Pfizer & Co., Inc.
No. 7911—Pallet loading machine, Power-Curve Conveyor Co.
No. 7912—Mastitis x-ray display, Chas. Pfizer & Co., Inc.
No. 7913—Service bulletin charts, Merck & Co.
No. 7914 — Urea feed brochure, Grand River Chemical Division of Deere & Co.
No. 7915—Feed sack sewing, the National Cotton Council.
No. 7916—Coccidiosis booklet, Dr. Salsbury's Laboratories.
No. 7917 — Booklet for dairymen, Technical Industries.
No. 7918 — Equipment catalog, Brower Manufacturing Co.
No. 7919—Metal pail for drench, William Cooper & Nephews, Inc.
No. 7920—Booklet on dehydrated alfalfa, American Dehydrators Assn.
No. 7921—Crust breaking machine, Seedburo Equipment Co.
No. 7922—Liquid lubricating jelly, Professional Veterinary Drug Co.
No. 7923—Vertical mixer, Sprout, Waldron & Co.
No. 7924—Structural steel material, Keystone Steel & Wire Co.
No. 7925—Enzyme product, Merck & Co., Inc.
No. 7926 — Pneumatic conveyor, Myers-Sherman Co.
No. 7927—Feed supplement, Nopco Chemical Co.
No. 7928 — Rotary blowers, Sutorbilt Corp.
No. 7929—Hanging waterer, Cumberland Case Co.
No. 7930 — Portable roller mill, Noramgrex Co.
No. 7931 — Enzyme supplement, Pabst Brewing Co.
No. 7932—Bulk feed body, Henderson Manufacturing Co.
No. 7933—Magnetic pulleys, Eriez Manufacturing Co.
No. 7934—Bulk feed box, Sudenga Industries.

Fleischmann's F·I·D·Y
IRRADIATED DRY YEAST
RICH IN VITAMIN D FOR FOUR FOOTED ANIMALS

Use Your Own Salt and Calcium with Formula B
...to Supply Every Needed Mineral
in a form so soluble "it melts on your tongue."

The HERMAN NAGEL Co.
53 W. Jackson Blvd.
Chicago 4, Illinois



Mr. Feed Dealer!

Full-page ads like this in leading farm publications are just one of the many ways Wirthmore will help boost dealer sales in 1960. If you're interested in Wirthmore's forward-looking policy of producing and promoting "Tomorrow's Feeds Today," drop us a line and we'll talk things over.

Wirthmore Feeds Inc.

240.5 eggs per bird housed (11½ months) with Wirthmore 36% poultry concentrate and own grains.

"The quality of Wirthmore Feeds as well as the service of their dealer and their poultry serviceman have been responsible for the results I have gotten. I would recommend Wirthmore Feeds to any poultryman who is interested in getting good results."

Paul E. Hepworth
Montague, Michigan

FOR BEST RESULTS, FEED

WIRTHMORE®

Concentrates & Complete Feeds

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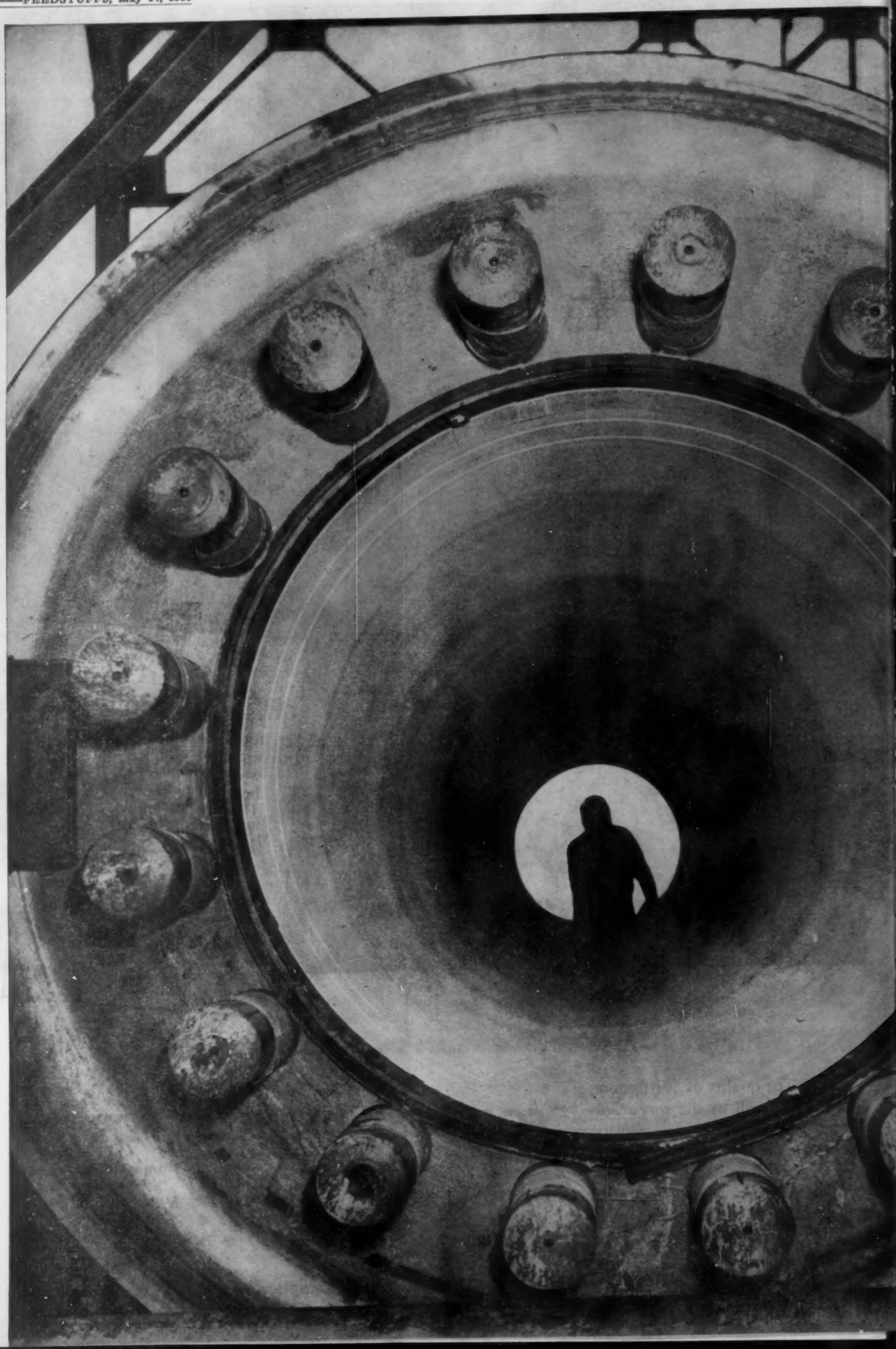
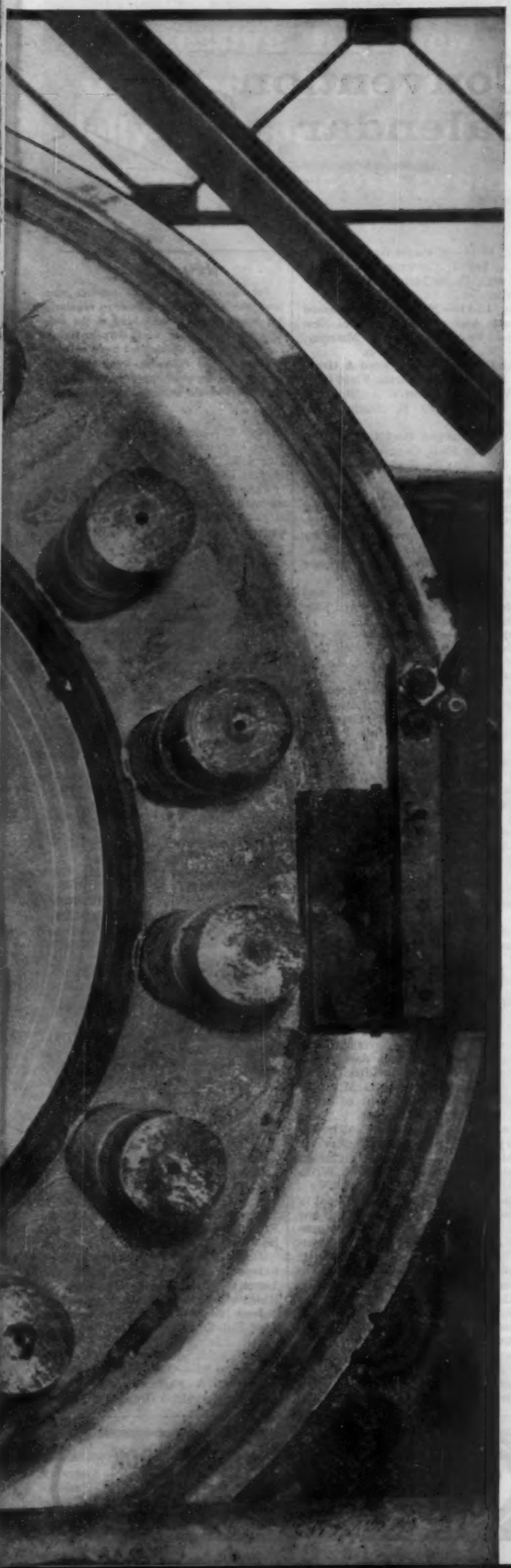
- Waltham, Mass.

Mills at:
- Olean, N. Y.
- Toledo, Ohio
- Brattleboro, Vt.
- St. Albans, Vt.
- Concord, N. H.
- Bridgewater, Mass.
- Preston, Md.
- Hickory, N. C.





Giant autoclaves, especially built for American Cyanamid Company, are silver plated inside, turn out a feed grade urea of the highest purity. In actual operation, both ends are closed up. As the autoclave whirls, carbon dioxide and ammonia gases are injected, then subjected to extremely high temperature and pressure. The result is a urea solution, which after excess ammonia is removed, contains less than 1 per cent impurities.

Cyanamid offers a new feed grade Urea of highest purity

CYREA*

UREA FEED COMPOUND

From its new, ultra modern plant, Cyanamid offers you a feed grade urea unexcelled for purity. Its name: CYREA. Its characteristic: *Guaranteed 42% nitrogen.* Cyanamid uses special quality control checks at every stage of production and runs an analysis on every batch before bagging. You are assured of a feed grade urea that is guaranteed 42% nitrogen bag after bag after bag.

Low Biuret—The biuret content of CYREA is extremely low. That means rumen bacteria are provided with maximum amounts of usable nitrogen.

Controlled, micro-prilled particle size—CYREA comes in the form of small, rounded beads. These prills are subjected to several screenings to assure a uniform and perfect particle size for your feeds. Micro-prilling also means CYREA will be evenly distributed in the feed.

Free-flowing, non-bridging — CYREA flows freely when it's made — and when you use it. That's because each prill is coated. They won't cake or bridge. CYREA is packaged in moisture-resistant, polyethylene-lined multiwall bags available to you in 80 lb. size.

Ask your Cyanamid representative to show you a sample of CYREA . . . and write to the address below for a specially-prepared booklet "Cyrea Urea Feed Compound in Ruminant Nutrition." American Cyanamid Company, Agricultural Division, New York 20, N. Y.

*CYREA is American Cyanamid Company's trademark for its urea feed compound.

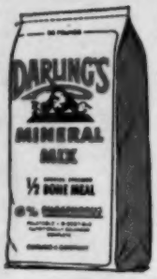
CYANAMID
CYREA
UREA FEED COMPOUND

Just these 3
fill every mineral need

Now—from one manufacturer—a complete mineral line. Stock *only these three,* and you take care of every customer's mineral requirements. Profit from fast turnover, proven consumer acceptance, and continuing advertising support.

DARLING'S
MIXING MINERAL CONCENTRATE

For *custom mixing.* Contains *9% phosphorus*—up to *3 times* that of ordinary mixing minerals. This concentrated formula, in 25 lb. bags, saves *one-half* on freight and storage. Easier handling, too. More profit for you—and a better buy for your customers.



DARLING'S
***Free-Choice* MINERAL MIX**

Formulated with one-half special steamed bone meal . . . DARLING's mineral mix contains *6% phosphorus.* It's *all feed,* every ingredient digestible and highly available. DARLING continues to offer its *money-back guarantee* that all livestock will eat it *free choice.*

DARLING'S
***Weather-Resistant* MINERAL BLOCK**

A *complete* mineral block, supplying not only the usual salt and trace minerals, but also the needed *phosphorus* and *calcium.* Contains one-half special steamed bone meal . . . *6% phosphorus.* Guaranteed palatable. Specially treated to prevent deterioration during storage and exposure.

Order all three from your favorite distributor!
DARLING & COMPANY
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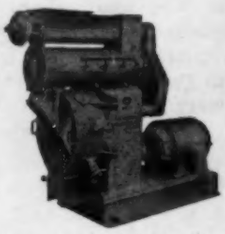
PAUL BERG, P. E. • 406 TRANSFER BLDG. • FORT WAYNE 2, IND.
CONSULTATION AND DESIGN

FEED MILL ENGINEERING SERVICE

✓Check the CPM
"HYFLO" MODEL

...a California Pellet Mill model that handles enormous volume for its size in continuous, highly economical operation. Usually equipped with 50 HP direct coupled motor.



This is just one of California's complete line of pellet mills. Other models with capacities from 1 to 15 tons per hour. Write for complete information, or ask for your CPM representative to call.

CPM CALIFORNIA PELLET MILLS
CALIFORNIA PELLET MILL COMPANY
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1114 E. Wabash Ave., Crawfordsville, Indiana
101 E. 13th Ave., North Kansas City 16, Missouri

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Also manufactured, sold and serviced by Henry Simon Ltd., Stockport, England.

Convention Calendar

May 15-16—Missouri Grain & Feed Assn.; Hotel Governor, Jefferson City; sec., D. A. Meinershagen, Higginsville.

May 15-17 — National Cottonseed Products Assn.; Roosevelt Hotel, New Orleans, La.; sec., John F. Moloney, Box 5736, Memphis 4, Tenn.

May 16—Des Moines Feed & Grain Club Field Day; Hyperion Field Club and Veterans Memorial Auditorium; Les Bright, 1850 E. Euclid, Des Moines 13.

May 18—Oregon Beef Cattle Day; Withycombe Hall, Oregon State College, Corvallis; Dr. J. C. Miller, Head, Dairy and Animal Husbandry Dept., College of Agriculture.

May 23-27 — Southeastern Egg Quality and Grading School; University of Georgia, Athens; sponsored by Southeastern Poultry & Egg Assn., sec., Harold E. Ford, 235 East Ponce de Leon Ave., Decatur.

May 24-25 — Egg Marketing and Merchandisers Institute; Cornell University, Ithaca, N.Y.

May 24-25 — Egg Marketing and Merchandising Institute; Cornell University, Ithaca, N.Y.; Prof. O. F. Johndrew, Rice Hall.

June 2-3 — Poultry Servicemens Clinic; Purdue University, Lafayette, Ind.; chm., Joe W. Sicer, Extension Poultryman, Poultry Science Department.

June 5-9—Association of Food and Drug Officials; Baker Hotel, Dallas, Texas; sec., J. F. Lakey, Director, Division of Food and Drugs, Texas State Department of Health.

June 6-7 — Central Retail Feed Assn.; Schroeder Hotel, Milwaukee, Wis.; sec., Eldon Roesler, 1712 W. St. Paul Ave., Milwaukee.

June 8-9—Pacific Northwest Grain Dealers Assn.; Davenport Hotel, Spokane, Wash.; sec., Merrill D. Sather, Peyton Bldg., Spokane.

June 9 — Ohio Beef Cattle Day; Ohio Agricultural Experiment Station, Northwestern Substation, Hoytville.

June 12-14—Eastern Federation of Feed Merchants, Inc., Whiteface Inn, Lake Placid, N.Y.; exec. director, Austin W. Carpenter, Sherburne, N.Y.

June 13-15 — American Association of Feed Microscopists; Hilton Hotel, San Antonio, Texas; sec., G. M. Barnhart, Missouri Department of Agriculture, Jefferson City, Mo.

June 14-15 — Alabama Poultry Industry Assn.; Municipal Auditorium (Exhibits) and Thomas Jefferson Hotel, Birmingham, Ala.; sec., W. L. Walsh, Box 567, Montgomery.

June 14-17—NEPPCO Egg Quality School; Rutgers University, New Brunswick, N.J.; Dr. A. Van Wagenen, NEPPCO, 10 Rutgers Place, Trenton 8, N.J.

June 16-18—Canadian Feed Manufacturers Assn.; Jasper Park, Alberta, Canada; chm., R. Hill, P. O. Box 39, Edmonton, Alberta.

June 17-18 — Delmarva Chicken Festival; Selbyville, Delaware; Delmarva Poultry Industry, Inc., R.F.D. No. 2, Box 47, Georgetown.

June 19-21—Indiana Grain & Feed Dealers Assn.; Mid-Summer Convention; French Lick-Sheraton Hotel, French Lick; sec., Fred K. Sale, 600 Board of Trade Bldg., Indianapolis 4.

June 19-22— The American Dairy Science Assn.; Utah State University, Logan; sec., H. F. Judkins, 32 Ridgeway Circle, White Plains, N.Y.

June 20—All-Industry Poultry Day; Law Building Auditorium, University of Illinois, Urbana; S. F. Ridlen, Poultry Extension Specialist.

June 21-22 — Association of Southern Feed & Fertilizer Control Officials; Riverside Hotel, Gatlinburg.

New Listings

For the convenience of readers who scan the Convention Calendar regularly for new listings, those added to the column in the current week appear separately from ones which have been entered previously. The following week they will be moved to their proper slot where they will remain until the event is held.

May 21 — Arizona Cattle Feeders Day; University of Arizona, Tucson; Bruce R. Taylor, Animal Science Dept.

June 14-15 — Ohio Elevator Management Clinic; Ohio State University, Columbus; George G. Greenleaf, sec., Ohio Grain and Feed Dealers Assn., Inc., 5625 N. High St., P. O. Box 121, Worthington.

Sept. 13-15 — Hatchery Short Course; University of Missouri, Columbia; E. M. Funk, sec., Missouri Poultry Improvement Assn., Poultry Bldg., P. O. Box 568, Columbia.

Sept. 15—All Poultry Industry Day; University of Missouri, Columbia; E. M. Funk, sec., Missouri Poultry Improvement Assn., Poultry Bldg., Box 568, Columbia.

Oct. 4-5—Washington Junior Poultry Exposition; Western Washington fairgrounds, Puyallup, Washington; W. R. Jenkins, Extension Poultry Specialist, Agricultural Extension Service, Washington State University, Pullman.

Oct. 13-14 — Turkey Short Course and Jr. Market Turkey Show; University of Missouri, Columbia; E. M. Funk, sec., Missouri Poultry Improvement Assn., Poultry Bldg., Box 568, Columbia.

Oct. 20-21—Poultrymen's Institute; Washington State University, Pullman; W. R. Jenkins, Extension Poultry Specialist, Agricultural Extension Service.

Oct. 27-28 — Washington Poultry and Hatchery Assn.; Chinook Hotel, Yakima.

1961

Jan. 27 — Missouri Turkey Day; University of Missouri, Columbia; E. M. Funk, sec., Missouri Poultry Improvement Assn., Poultry Bldg., Box 568, Columbia.

Sept. 30—Nebraska Feed and Nutrition Conference; University of Nebraska College of Agriculture, Lincoln; chm., Dr. John L. Adams, Poultry Husbandry Dept.

SERVICE Ray Ewing PRODUCTS
BEHIND THE NAME GOES ON

BUD COOK
The Lee Cook Co.
410 Lewis Bldg.
Portland 4, Ore.
CApitol 2-1913

Progressive feedmen are increasing sales by backing fully-equipped "ready-to-go" poultry house projects

And . . more and more, these same men are specifying Big Dutchman automatic poultry equipment . . .

THE REASONS WHY ARE CLEAR . . .

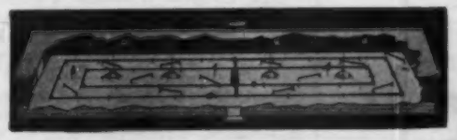
Big Dutchman "packages" HIGHER PROFIT SYSTEMS for every need —

FOR LAYERS

CUBIC AIR ROOSTS — Increase the bird capacity of existing buildings 3-fold. Create natural living area for birds; allow them to produce at top capacities.

PART LITTER — PART SLATTED FLOOR — slats carry feeding and watering equipment, litter portion provides dusting area. Pit cleaner removes droppings.

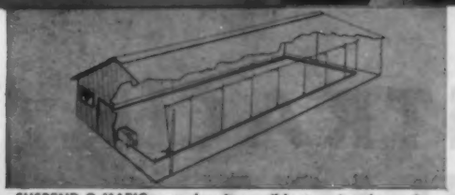
FOR BROILERS



FEEDING, WATERING, FEED CLEANING, BROODING — the entire day-by-day routine of bird care performed efficiently — automatically! Dramatic savings in labor; healthier flocks.

FOR TURKEYS

OVERHEAD — a system built solely for turkeys with all the benefits of automation: labor savings, time savings, no heavy feed handling, clockwork dependability. All feeding equipment overhead.



SUSPEND-O-MATIC — makes it possible to raise the entire feeding and watering system off the floor as the birds grow, and when the house has to be cleaned.

Big Dutchman has long been recognized as the "one dependable source" for poultry house automation.

LEADERSHIP THROUGH RESEARCH — A product development staff researches, designs, engineers and farm-tests every Big Dutchman product before it is marketed. Special "in operation" experimental poultry buildings are maintained on the plant grounds for just this purpose.

"EFFICIENCY ENGINEERED" POULTRY HOUSE PLANNING — Efficient poultry house automation layouts are available from all Big Dutchman Sales Engineers and direct factory branches.

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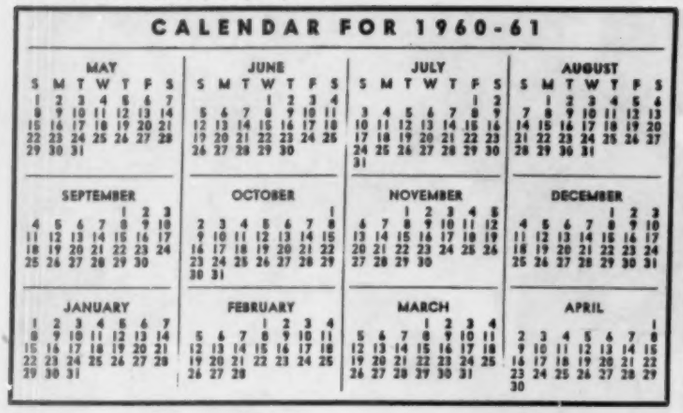

Tenn.; sec., Maurice B. Rowe, Department of Agriculture, 1119 State Office Bldg., Richmond 19, Va.

June 23-24—Northeastern Poultry Producers Council Business Management Conference for Egg and Poultry Marketing Cooperatives; Hotel Viking, Newport, Rhode Island; Alfred Van Wagenen, 10 Rutgers Place, Trenton 8, N.J.

June 24—Iowa Cattle Feeders Day; Iowa State University, Ames, Iowa; Dr. Wise Burroughs, Animal Husbandry Dept.

June 24-26—Arkansas Poultry Festival; Little Rock; Arkansas Poultry Federation, P.O. Box 1446, Little Rock; chm., Jerry Hinshaw, Springdale.

July 19-21—American Poultry Congress and Exposition; Ellis Auditorium, Memphis, Tenn.; sponsored by American Poultry & Hatchery Federation; sec., Don M. Turnbull, 521 E. 63rd St., Kansas City 10, Mo.

July 23-26 — Georgia Feed Assn.; General Oglethorpe Hotel, Wilmington Island, Savannah; sec., Will L. Kinard, Suite 210, 3240 Peachtree Road Bldg., Atlanta 5, Ga.

July 29 — Ohio Sheep Day; Ohio Agricultural Experiment Station, Wooster.

Aug. 1-6—Feed Microscopy Short Course; Memorial Student Center, Texas A&M College, College Station; sponsored by Texas Agricultural Experiment Station; chm., Ewing E. Brown, State Chemist's Office, Texas Agricultural Experiment Station.

Aug. 2-5 — Poultry Science Assn.; University of California, Davis; sec., C. B. Ryan, Texas A&M College, College Station.

Aug. 11 — Michigan Swine Day; Michigan State University, East Lansing; chm., Ed Miller, Extension Specialist, Animal Husbandry.

August 12 — Ohio Dairy Day; Ohio Agricultural Experiment Station, Wooster.

Aug. 14-18—Business Management Program, sponsored by Southeastern Poultry & Egg Assn., University of Georgia, Athens; sec., Harold E. Ford, 235 East Ponce de Leon Ave., Decatur.

Aug. 18—Michigan Cattle Feeders Day; Michigan State University, East Lansing; Hugh E. Henderson, Extension Specialist, Animal Husbandry.

August 19—Ohio Swine Day; Ohio Agricultural Experiment Station, Wooster.

Aug. 22-23—Kentucky Feed Conference; Campbell House, Lexington; sponsored by the Kentucky Grain & Feed Assn. and University of Kentucky; sec., Jack Weber, P.O. Box 425, Lexington.

Aug. 22 - 23 — American Soybean Assn. and National Soybean Processors Assn., joint conference and meeting; Hotel Peabody, Memphis, Tennessee; George M. Strayer, exec. vice pres., American Soybean Assn., Hudson, Iowa, and R. G. Houghtlin, pres., National Soybean Processors Assn., 3818 Board of Trade Bldg., Chicago 4, Ill.

Aug. 25—Michigan Lamb Feeders Day; Michigan State University, East Lansing; chm., Leonard Blakeslie, professor of Animal Husbandry.

Aug. 29-Sept. 1 — Georgia Poultry Institute; Rock Eagle, Georgia; Milton Dendy, Extension Poultryman, College of Agriculture, University of Georgia, Athens.

Sept. 1-6 — International Congress on Nutrition; Sheraton-Park Hotel, Washington, D.C.; sponsored by International Union of Nutritional Sciences; sec., Milton O. Lee, 9650 Wisconsin Ave., Washington 14, D.C.

Sept. 14-15—Maryland Feed Servicemen's Conference; University of Maryland, College Park; chm., Wade H. Rice, Extension Service.

Sept. 14-16—National Feed Ingredients Assn.; Liggetts Holiday Inn, Burlington, Wis.; sec., Paul W. Bonewitz, 1023 Equitable Bldg., Des Moines, Iowa.

Sept. 20-21—Iowa Poultry Convention; Veterans Memorial Auditorium, Des Moines; mgr., LeRoy L. Kruskop, 535 East Lincoln Way, Ames.

Sept. 21-22 — Marketing Seminar for Feed Manufacturers; Morrison Hotel, Chicago; Sales Executives Council, American Feed Manufacturers Assn., W. E. Glennon, president, 53 W. Jackson Blvd., Chicago.

Sept. 21-23 — Feed Production School; Continental Hotel, Kansas City; sponsored by Feed Production School, Inc.; pres., Lloyd Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Sept. 22-23 — Arkansas Formula Feed Conference; University of Arkansas, Fayetteville; chm., Dr. E. L. Stephenson, Department of Animal Industry and Veterinary Science.

Sept. 29 — Vermont Feed Dealers and Manufacturers Assn.; University of Vermont, Burlington; sec., D. C. Henderson, Hills Agricultural Science Bldg.

Oct. 2-4 — Poultry Industries of Louisiana, Inc.; Bellemont Motor

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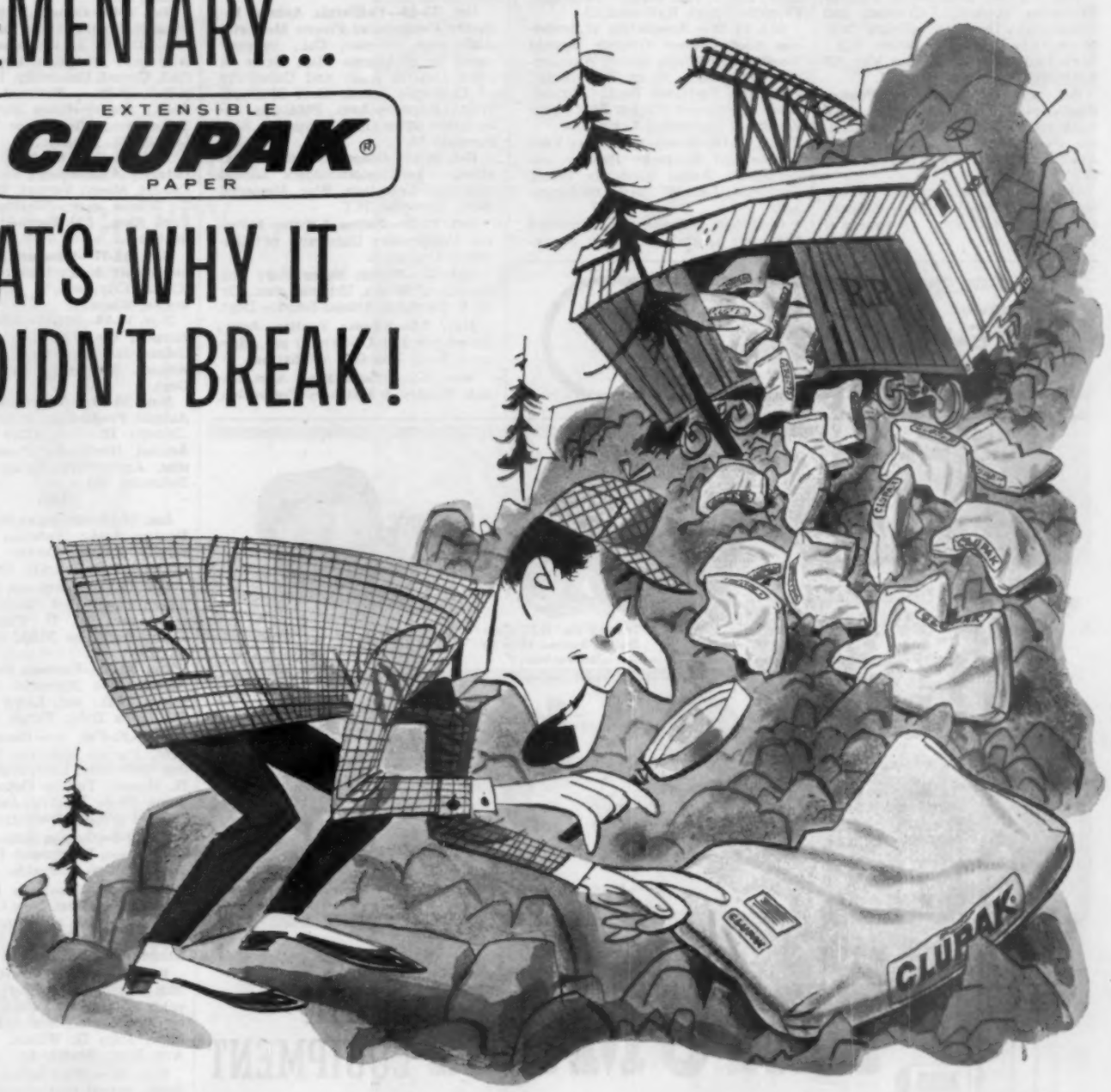

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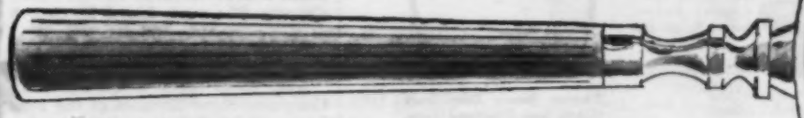

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Hotel, Baton Rouge; sec., Clyde Ingram, Knapp Hall, Louisiana State University, Baton Rouge.

Oct. 4-6 — Northeastern Poultry Producers Council; Exposition and Convention; Onondaga County War Memorial Bldg., Syracuse, N.Y.; Doris Endebrock, Exposition Mgr., 10 Rutgers Place, Trenton 8, N.J.

Oct. 4-6 — Northeastern Poultry Producers Council Exposition and Convention; War Memorial Auditorium, Syracuse, N.Y.; sec., Richard I. Ammon, 10 Rutgers Place, Trenton 8, N.J.

Oct. 5-7—Texas Nutrition Conference, Texas A&M College Station; chm., Dr. J. R. Couch, Department of Poultry Science.

Oct. 11-12—Virginia State Poultry Federation convention and trade show; Hotel Roanoke, Roanoke, Virginia; sec., J. Paul Williams, 615 East Franklin Street, Richmond 19.

Oct. 12-13 — Association of American Feed Control Officials Annual Meeting; Shoreham Hotel, Washington, D.C.; sec., Bruce Poundstone, Feed and Fertilizer Dept., Agricultural Experiment Station Bldg., University of Kentucky, Lexington.

Oct. 16-18—Kentucky Poultry Federation and Kentucky Poultry Improvement Assn.; Kentucky Hotel, Louisville; John W. Tuttle, field manager.

Oct. 16-20 — Business Management Program; sponsored by the Southeastern Poultry & Egg Assn., University of Georgia, Athens; sec., Harold E. Ford, 235 East Ponce de Leon Ave., Decatur.

Oct. 17-18—California Animal Industry Conference; Fresno Memorial Auditorium, Fresno, Cal.; co-sponsored by California Hay, Grain & Feed Dealers Assn. and University of California; chm., Bert Maxwell, Nulaid Farmers Assn., Petaluma; association office, 1400 Tenth St., Sacramento 14.

Oct. 20-21—Cooperative G.L.F. Exchange, Inc.; stockholders annual meeting; Onondaga War Memorial Bldg., Syracuse, N.Y.

Oct. 27-28—National Swine Industry Conference; University of Kentucky, Lexington.

Oct. 28—Illinois Sheep Day; University of Illinois, Urbana; chm., Dr. U. S. Garrigus, Animal Science Dept.

Nov. 2-3—Kansas Poultry Assn.; Broadview Hotel, Wichita; sec., Harry J. Reed, Box 663, Manhattan.

Nov. 2-3—Illinois Feed Assn.-Illinois Poultry & Hatchery Federation, mory, Springfield; sec., IFA, Dean M. Clark, 141 W. Jackson Blvd., Chicago 4; sec., IPHF, Aubrey Harless, Shelbyville, Ill.

Nov. 3-4 — Cornell Nutrition Conference; Hotel Statler, Buffalo, N.Y.; chm., Dr. H. H. Williams, Biochemistry and Nutrition Dept., Savage Hall, Cornell University, Ithaca, N.Y.

Nov. 9-12 — National Renderers Assn.; Statler-Hilton Hotel, Dallas, Texas; sec., Miss Jamie Fox, 30 N. LaSalle St., Chicago, Ill.

Nov. 14-15 — Washington Animal Industry Conference; Skagit Valley College, Mount Vernon, Wash.; John G. Wilson, mgr., Washington State Feed Assn., 814 Second Ave. Bldg., Seattle 4.

Nov. 16-17—Missouri Poultry Improvement Assn.; Hotel Continental, Kansas City; sec., E. M. Funk, Columbia, Missouri.

Nov. 16-18—Florida Nutrition Conference; University of Florida, Gainesville; chm., Dr. J. P. Feaster, Animal Husbandry and Nutrition Dept.

Nov. 25-26 — American Society of Animal Production; Hotel Sherman, Chicago, Ill.; sec., Clair E. Terrill, Animal Husbandry Research Division, Agricultural Research Center, Beltsville, Md.

1961

Jan. 12-13—Michigan Feed & Grain Dealers Assn.; Michigan State University, Kellogg Center; sec., Nevel Pearson, P.O. Box 472, East Lansing.

Jan. 16-17—Northwest Retail Feed Assn.; Hotel Pick-Nicollet, Minneapolis; sec., W. D. Flemming, 112 Grain Exchange Bldg., Minneapolis, Minn.

Jan. 23-25—Farmers Grain Dealers Assn.; Civic Memorial Auditorium, Fargo, N.D.; sec., Lloyd C. Hanson, 513 Black Bldg., Fargo.

Jan. 31-Feb. 1 — Hoosier Turkey Trot; Purdue Memorial Union, Purdue University, Lafayette, Ind.; John N. Howell, Turkey Department, Indiana State Poultry Assn., Poultry Bldg., Purdue University.

Feb. 2-3—Oregon Animal Nutrition Conference; Withycomb Hall, Oregon State College, Corvallis.

Feb. 7-10—American Dehydrators Assn.; Jung Hotel, New Orleans, La.; executive vice president, Joseph Chrisman, 430 Board of Trade Bldg., Kansas City 5, Mo.

Feb. 8-9—Pacific Northwest Feed Mill Production School; Hotel Leopold, Bellingham, Wash.; sponsored by Washington State Feed Assn.; mgr., John G. Wilson, 814 Second Ave. Bldg., Seattle 4.

Feb. 10 — Washington State Feed Assn., annual convention; Hotel Leopold, Bellingham, Wash.; mgr., John G. Wilson, 814 Second Ave. Bldg., Seattle 4.

Feb. 10-11—Poultry Fact Finding Conference; sponsored by Institute of American Poultry Industries; pres., Harold M. Williams, 59 E. Madison, Chicago 2.

Feb. 19-21 — Ohio Grain & Feed Dealers Assn.; Neil House, Columbus; sec., George G. Greenleaf, 5625 N. High St., P.O. Box 121, Worthington.

April 10-12—Poultry and Egg National Board; Sheraton Towers Hotel, Chicago, Ill.; mgr., Lloyd H. Geil, 8 S. Michigan Ave., Chicago 3.

1962

Aug. 13-18—12th World's Poultry Congress; Show Grounds of the New South Wales Royal Agricultural Society, Sydney, Australia; Dr. Cliff D. Carpenter, chairman, U.S. Participation Committee, 1207 Emerald Bay, Laguna Beach, Cal.; Dr. A. William Jasper, secretary, c/o AFBF, 2300 Merchandise Mart, Chicago 54, Ill.

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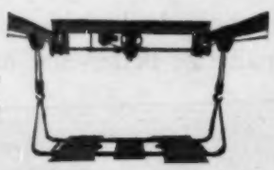

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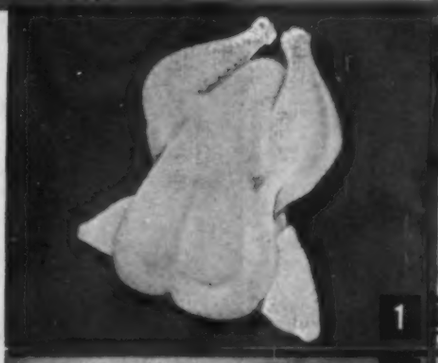

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BY SPENCER H. MORRISON, PH.D., D. V. M.

Liberal vs. Limited Grain Feeding for Milk Production.

● A. D. Pratt and C. F. Monroe, Ohio Agricultural Experimeat Station, Research Bulletin 852, March, 1960.

ABSTRACT

Summary results are given for an experiment conducted from September, 1951, to March, 1957, and involving 62 lactations completed by cows fed grain liberally and by 60 fed limited grain. Twenty-three other lactations were discarded because of some uncontrolled variable.

The animals were Jerseys which at the start of experimentation were divided into comparable groups. As 2-year-old heifer calves, the animals were assigned alternately to the two groups without regard to their relationship to other members of the group. Many cows were re-bred to calve at 11 months, especially those with known past history of short lactations. In the summer of 1956 leptospirosis affected the herd, but records were included unless lactation curves indicated adverse results.

Silage — a grass-legume mixture — was fed to a maximum of 24 lb. daily. Hay was fed ad lib so that cows on limited grain could compensate by eating additional hay. Hay was to be early-cut and high quality, but circumstances forced use of rain-damaged and commercial U.S. No. 3 hay at times during the course of the trial.

Grain mixture was approximately 14-15% protein and was comprised of: 650 lb. ground ear corn, 200 lb. ground oats, 150 lb. soybean oil meal, 10 lb. mineralized salt and 10 lb. bonemeal.

Both groups ran together on pasture from about May 1 to Nov. 1. When necessary, supplementary feedings were made of hay or silage to both groups alike. Thus, the groups had the opportunity to adjust for requirements of nutrients by varying the amount of grazing.

The same grain mixture was used in the summer even though this resulted in excess estimated protein during the early part of the grazing season.

Both groups were fed grain according to the following schedule which allowed a slightly higher ratio of grain to forage when production was higher:

Daily 4% F.C.M. (lb.)	Grain feeding (lb.) Limited	Liberal
47	11	15
42	9	14
36	8	12
30	6.5	10
24	5	8
18	3	6
12	2	4
Dry	2	4

The average age of those fed liberally was 4 years, 10 months, as compared with 4 years, 5 months, for those fed limited grain. The average length of lactation periods was 292 and 293 days, respectively. The average 4% F.C.M. converted to a mature basis was 8,921 lb. for liberally fed cows, and 9,310 lb. for limited fed cows. Because of the variability in the groups, etc., this difference in milk production was not significant. The average butterfat percentage was the same for both groups and there was no apparent effect of either grain or roughage on fat content.

It should be noted that there was the expected increase in 4% F.C.M. with greater maturity for both groups of cows, but that this increase was not as great as expected for 2-year-olds fed limited grain. This suggested that the limited grain feeding did not provide adequate energy to meet the needs for 2-year-olds.

The group fed grain liberally ate 1 lb. grain for each 3.06 lb. of 4% F.C.M., while those fed limited grain averaged 4.39 lb. milk for each 1 lb. grain fed. There were no significant differences of the rate of grain feeding on services per conception.

Multiple Regression Analysis

When a multiple regression analysis was run which separated out the effects due to pasture vs. barn feeding, stage of lactation, and rate of grain feeding, the greater milk production on the limited grain feeding **was found to be highly significant.** Pasture caused an increase of 1.6 lb. of 4% F.C.M. daily over that obtained from winter feeding.

Using farm prices of $25 per ton of hay, $8 for meadow crop silage and $46.50 for the grain mix, the feed cost per 100 lb. of milk produced in the winter (when a record of total

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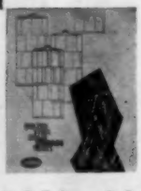

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SELLIN' SAM **By Jim Zilverberg**

"Well, I might and I might not—are you a Republican or a Democrat?"

feed consumption was made) was $1.78 for limited fed cows vs. $2.53 for those liberally fed. Because of the lack of information for the pasture season on pasture consumption no costs were available for this period regarding milk production.

The experiment also indicated that the grain mixture was adequate in protein and there was a suggestion that for the level of production of the cows 12% protein would have been adequate with the forage quality available.

COMMENT

The larger share of research work concerned with supplementing grain for milking cows has shown that increased milk production can be expected up to the inherited capacity of the cow for additional increments of grain, but that there is also "a law of diminishing returns" for such additions of grain effective in many cases. The Ohio workers have reported in the past (1934, 1946) that cows fed on their "limited" grain rations gave more milk than those on "liberal" rations.

It should be pointed out, however, that actually the "limited" fed cows were fed quite liberally during certain periods of the year—i.e., pasture feeding. When one calculates back the estimated consumption and milk production, according to commonly accepted standards, he is struck with the fact that the cows on the "limited" group were being overfed on grain and more than their requirements during this time. Also, during the barn feeding period, the "liberal" fed group was not fed liberally according to feeding standard recommendations in all cases. Obviously, the limited fed group was fed somewhat limited rations during the winter, and the liberally fed group was fed very liberally during the pasture period.

In my opinion this work points up one of chief criticisms of certain experiments which attempt to evaluate many variables at once and then arrive at desired conclusion by means of statistical analysis of the data (not that statistics, properly applied, are not a Godsend to researchers).

It seems to me that in order to arrive at valid conclusions cows should be fed according to their own individual "requirements" and not according to some fixed-ratio of milk to grain or "tables." Also, it seems unwise to run an experiment without knowing something about the consumption and digestibility of the pasture by the two groups, preferably by the chromogen - chromic oxide technique, but certainly at least by some method of measurement.

Some may also question rightly the fact that high-producing cows (not used in this experiment) would give different results with limited grain feeding, even with good quality roughage. Evidence of this is certainly given in the recent report from New Jersey (1960) evaluating the effect of high levels of grass silage with various levels of grain feeding and reviewed in this column April 16, 1960.

Smoot Grain Co. Buys Denver Firm

DENVER — Smoot Grain Co., Salina, Kansas, May 2 acquired possession of the F. C. Ayres Milling & Grain Co., Denver.

The new business, to be known as Truckers Terminal, Inc., will be operated as a general grain merchandising and storage enterprise, it was reported.

Curtis Coffey, Brewster, Kansas, who has been associated with Smoot Grain since 1952 at Enid, Oklahoma; Kansas City, Mo., and Goodland, Kansas, will be manager of Truckers Terminal.

Newton Gray, who spent several years in the grain business with the Pillsbury Co. Grain division, and was in business for himself and most recently was with F. C. Ayres, will continue in the employment of the new firm as a grain merchandiser.

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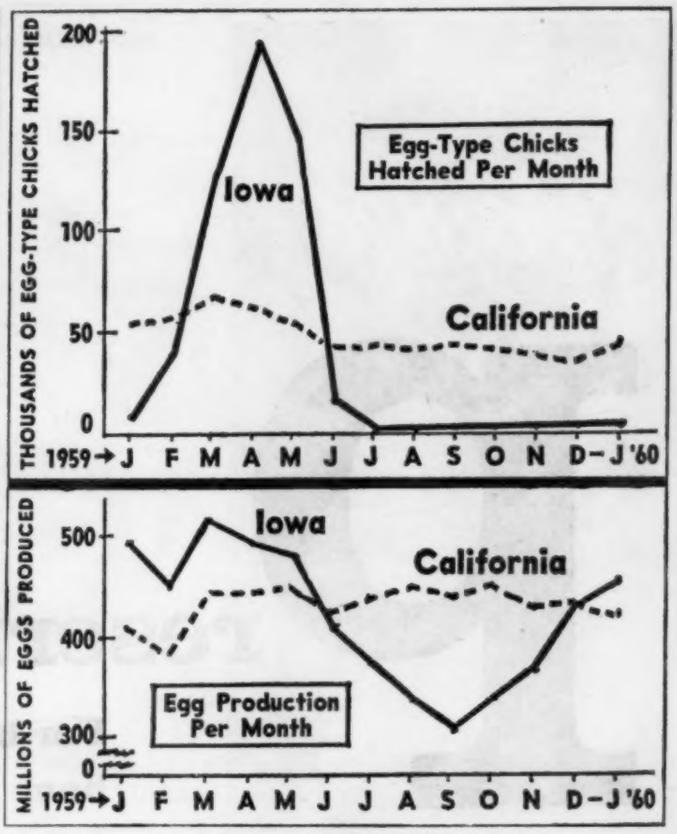

Chick Hatch, Egg Production Comparison

Iowa, California Egg Operations Compared

AMES, IOWA—Iowa and California egg production operations have been compared in an article by Paul R. Walther, extension poultryman at Iowa State University, in an article in the Iowa Farm and Home Register.

The article shows the differences between the operations in the Midwest and more highly specialized areas like California.

Mr. Walther notes that Iowa lost its position as the leading egg production state last year, falling behind to California, which produced 5.2 billion eggs. Iowa produced 5 billion eggs, followed by Minnesota, 3.8 billion, and Pennsylvania, 3.6 billion.

"California poultrymen have several incentives which have encouraged them in the egg business," Mr. Walther notes. "Relatively uniform weather conditions have made it easier for their poultrymen to go to a year-round breeding system. This helps them to maintain a relatively even egg production during the year."

Mr. Walther points out that California poultrymen bought only 32% of their egg-type chicks during the three months of heaviest purchases—February, March and April. Iowa poultrymen bought 87% of their chicks during March, April and May.

Because of this general situation, Iowa hens produce from 30-40% fewer eggs in September than in March, Mr. Walther points out. Iowa hens produced 318 million eggs last September or 39% fewer than the 521 million produced in March.

In 1959, Mr. Walther says, California hens produced 386 million eggs in February, their slack month, or only 15% fewer eggs than the 454 million produced during their peak month, October.

Mr. Walther notes that marketing men in New York and Chicago are in constant trouble because of fluctuating production which causes them to enlarge their marketing activities in one half of the year and cut back in the other.

"No wonder Iowans take a beating on egg prices and California poultrymen are flourishing," he said.

With relatively stable production, California poultrymen have been able to develop stable marketing programs, he says. "One study showed that Los Angeles egg prices changed on the average of only once each two weeks. They have remained unchanged for as long as three months," Mr. Walther said. "In New York, the wholesale egg quotations changed on the average of one change every two trading days.

"The answer for Iowa," Mr. Walther says, "is to get on a year-round pullet-rearing program. It is more economical to raise birds in confinement, using the house and equipment the year-round, rather than to follow our present range-rearing system with its off and on use of houses and equipment. With insulated growing and laying houses, we can provide our birds with a California-like climate.

"Our hatcherymen will be able to produce lower-cost chicks if they have uniform year-round sales," he says. "And our marketing firms will be able to do a better job of handling our eggs, too All this means greater efficiency."

Read CAPITAL COMMENT In FEEDSTUFFS

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HYGROMIX IS THE ONLY WORM CONTROL METHOD THAT STOPS SWINE WORM REPRODUCTION. BY CONTINUOUSLY KILLING WORMS *BEFORE* THEY CAN LAY NEW EGGS, HYGROMIX STRANGLES THE SOURCE OF THE WORM PROBLEM.

Proof that Hygromix stops worm-egg production...*and why this is important*

One of the biggest advantages to the use of Hygromix feeds is the fact that Hygromix stops worm-egg production of the large roundworm, nodular worm, and whipworm. Since the female roundworm, alone, is capable of laying up to 1,400,000 eggs daily, reducing the source of reinfestation is the best way to control swine worm damage.

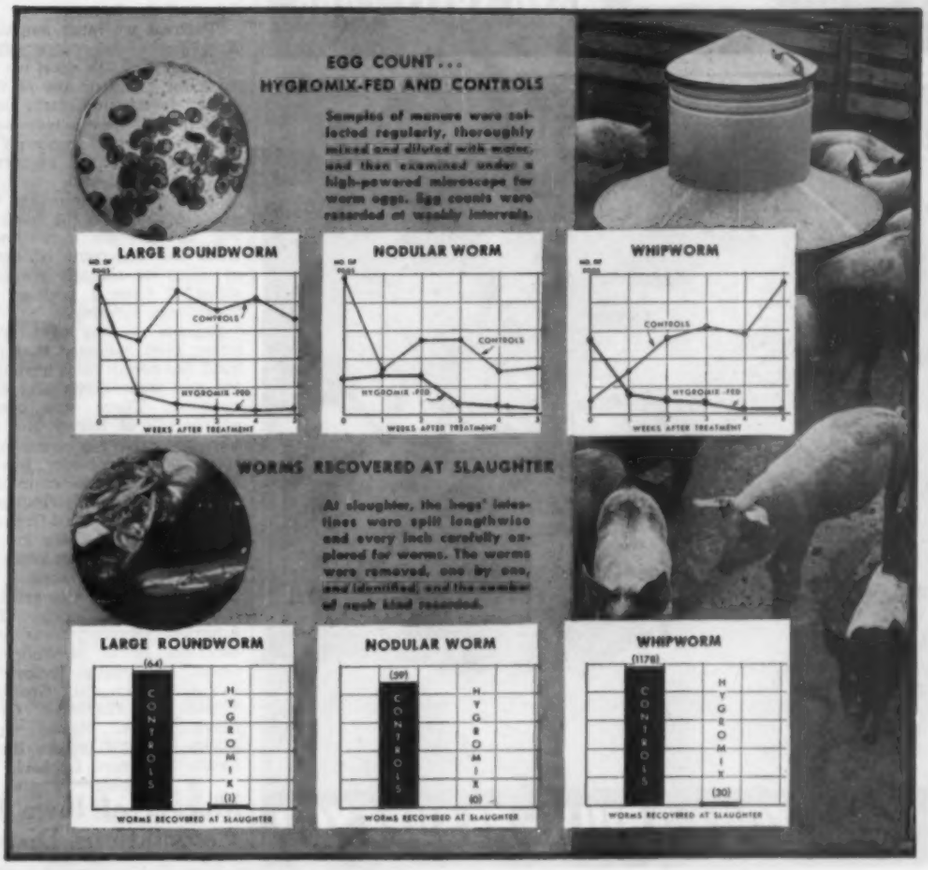
Hygromix is the *only* worm control method that stops this problem at the source . . . before the hidden damage is done. Purge-type wormers act too late to control this continuous cycle of reproduction. Hygromix breaks the life cycles of the three swine worms at two points. It kills adult worms already present in the hog, and stops their egg production . . . and it kills new baby worms as they enter the intestinal tract . . . before they grow to egg-laying maturity. And, since Hygromix is in the feed, it protects the hog day after day.

These charts prove Hygromix stops worm reproduction

On the right is a summary of the results of experiments which were made to test Hygromix's ability to stop swine worm reproduction. Pigs from worm-infested herds were divided into equal groups. One group (called the "control" group) was fed a high-quality swine ration without Hygromix. The other group was fed the same ration *with* Hygromix.

With high-powered microscopes, regular worm-egg counts were made throughout the tests. Notice that egg production was cut practically to nothing within three weeks. As a final check, all pigs were slaughtered at the end of the tests, and any worms present were carefully hand-counted.

These experiments firmly proved that Hygromix feeds do two things no other worm control method can do: *Hygromix kills more kinds of worms . . . large roundworms, nodular worms, and whipworms. Hygromix stops swine worm reproduction.*


EGG COUNT...
HYGROMIX-FED AND CONTROLS
Samples of manure were collected regularly, thoroughly mixed and diluted with water, and then examined under a high-powered microscope for worm eggs. Egg counts were recorded at weekly intervals.
LARGE ROUNDWORM
NODULAR WORM
WHIPWORM
CONTROLS
HYGROMIX-FED
WEEKS AFTER TREATMENT
WORMS RECOVERED AT SLAUGHTER
At slaughter, the hogs' intestines were split lengthwise and every inch carefully explored for worms. The worms were removed, one by one, and identified, and the number of each kind recorded.
LARGE ROUNDWORM
(64)
CONTROLS
HYGROMIX (1)
WORMS RECOVERED AT SLAUGHTER
NODULAR WORM
(39)
CONTROLS
HYGROMIX (0)
WORMS RECOVERED AT SLAUGHTER
WHIPWORM
(1178)
CONTROLS
HYGROMIX (30)
WORMS RECOVERED AT SLAUGHTER

HERE'S WHAT COLLEGE RESEARCHERS HAVE TO SAY ABOUT HYGROMIX'S ABILITY TO STOP SWINE WORM REPRODUCTION:

Many state colleges have conducted tests to determine the effect of Hygromix-fortified feeds. Here are a few excerpts taken from their summary of findings:

Hygromycin effectively controlled roundworms, nodular worms, and whipworms, as shown by ova counts taken and by worm counts obtained at slaughter.

Purdue Swine Day—Mimeo A.S. 242, August, 1958

Hygromycin B is highly effective and more nearly meets the requirements of an ideal wormer than any of the former compounds.

"Worm Eggs Cost You Money"—University of Nebraska, E.C. 1902

Feeding of hygromycin B to sows during gestation lowered the reservoir of *Ascaris* eggs from 555 per gram of feces in the untreated sows to 2 eggs per gram in those treated.

Nebraska Rooters Day Swine Progress Report 370—Summer, 1958

The reduction in the number of ascaris (roundworm) and nodular worm ova in the treated groups would indicate that this feed additive (Hygromix) is very effective in the elimination of these internal parasites of swine.

Ohio State Swine Day, 1957—Animal Science Mimeo 106

Hygromycin hits harder than other drugs. The new drug gets whipworms, which no other drug has been able to touch. It acts partly by blocking reproduction of the parasites . . . an ideal way to stop the worms before they do the damage.

Press Release—University of Wisconsin, December 16, 1957

Hygromycin controlled roundworms effectively, as there were no roundworm ova present in the feces of any pigs receiving either hygromycin or the combination of hygromycin and chlorotetracycline.

South Dakota Swine Field Day—September 11, 1958

Hygromycin was effective in reducing the roundworm egg count.

"The value of various antibiotics for growing fattening swine"—Missouri Swine Day, September 5, 1958

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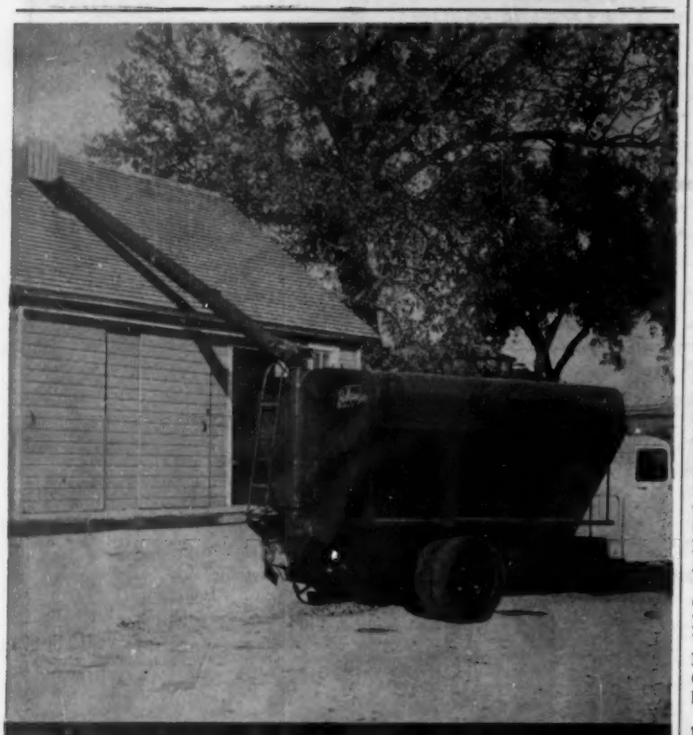

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Says Country Elevator Trade Must Reorient Itself to Agriculture

AMARILLO, TEXAS—"As a country elevator trade, it seems we must re-orient ourselves about our place in the business world," Ray Bowden, secretary of the Texas Grain & Feed Directors Assn., told 450 persons attending the recent Panhandle Grain & Feed Dealers Assn. convention at the Herring Hotel.

"Sometimes we think of ourselves as city-type businessmen, when, in fact, most of us simply are doing farm business at off-farm positions," he pointed out.

Mr. Bowden noted that a few generations ago the farmers were storing, conditioning, transporting and often processing their own grain, the jobs which the elevators are now doing off the farm.

"Perhaps we must emphasize this direct participation in agriculture itself," he said. "To do it we need not subscribe to all or any of the sometimes uneconomic farm legislation that has been enacted; like many farmers, we may condemn and oppose those political gestures which we consider harmful.

"But the fact remains that our whole attitude on the farm question will be different if we look at it from the viewpoint of agriculture, of which we actually are a part, instead of from a position critically apart from farming."

Reports on the condition of the wheat crop indicated that it is very good, but recent rains have been spotted and some areas are in need of moisture. There was considerable winter kill of barley and oats and some areas have been replanted with spring oats and barley, but it is too soon to tell if these crops will make it, other crop reports indicated.

Don Riffe, Stratford Grain Co., was elected president of the group during the convention. Other officers named were Conway Kuykendall, Randall Grain Co., Happy, vice president, and Roy Johnson, Interstate Elevators, Amarillo, secretary-treasurer. Directors are D. C. McWhorter, Black Grain, Inc.; Ralph Evans, Wheeler-Evans Grain Co., Groom; Frank White, Jr., Clarendon Grain Co.; Lloyd Nelson, Nelson Grain Co., Claude, and C. L. Moore, Burrus Panhandle Elevators, Lubbock.

Merger of Iowa Feed Associations Discussed

DES MOINES—The possibility of a merger between the Western Grain & Feed Association of Iowa and the Feed Institute was discussed at a recent meeting of the executive committees of the two associations.

It was felt that the Iowa feed industry, including feed manufacturers, feed dealers and feed suppliers, could be better served by one organization and by eliminating the duplication of services, members, dues, etc., according to a bulletin from Western Grain & Feed.

The effective date of the possible merger has been set for July 1, 1960. The two organizations would continue to operate separately and individually until April 1, 1961, at which time a new dues structure combining the two associations would become effective, it was stated in the bulletin.

Grain Shipment

AUGUSTA, MAINE—The Kennebec River, once a major shipping artery, again will be carrying commercial boats other than tankers. Three barges to carry corn from the Great Lakes via the New York Bargeway have been chartered to haul the grain for the Lipman Poultry Co. The barges will unload at a wharf in Farmingdale that once was used for shipping lumber all over the world. The poultry firm uses about 90,000 tons of grain a year.

A man was telling his club friends about the frightening experience he had during a trip out West.

"It was harrowing," he said. "Indians to the left of me, Indians in front, Indians everywhere closing in on me."

"Gee whiz," exclaimed a listener. "What did you do?"

"What could I do?" replied the man, "I bought a basket."

◆ ◆ ◆

"Joe," one golfer remarked to another on the links, his voice full of marvel, "as long as we've been playing golf together I've never heard you swear."

"Yes, it's true I don't cuss," spoke up the other golfer thoughtfully, "but I'll have to admit when I slice I spit, and wherever I spit the grass doesn't grow any more."

◆ ◆ ◆

A baby sardine was swimming along happily with his mother when he saw his first submarine. Shaken with fright, he swam to his mother's side.

"Don't be frightened, dear," assured his mother, "it's just a can of people."

◆ ◆ ◆

The famous psychologist had finished his lecture and was answering questions. One meek little member of the audience asked, "Did you say that a good poker player could hold down any sort of executive job?"

"That's right. Does it raise a question in your mind?"

"Yes," came the reply. "What would a good poker player want with a job?"

◆ ◆ ◆

Judge—"You are accused of hitting this Chinaman over the head with a vase. Have you anything to say for yourself?"

Prisoner—"Your honor, he threatened me in broken English, so I replied with broken China."

Visitors at Honeggers

FORREST, ILL.—Recent visitors at the Honegger Breeder Hatchery were Mr. and Mrs. Kenneth Li, owners of Kenin Chicks, Georgetown, British Guiana, S.A.

Kenin Chicks, as a Honegger associate hatchery, is now serving the Guianas in South America with what is considered to be the largest and most modern operation in the Guianas.

Mr. and Mrs. Li spent several days at the Honegger hatchery learning more of the parent organization, and how they can improve their operation. They were especially interested in chick sexing, which is new in the Guianas.

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Here's the sure way to prevent this — wipe out insect infestation with Douglas Tetrakil or Douglas Tetrafume. Then you can wait for more favorable prices without worrying about bugs eating up the profit.

Tetrafume and Tetrakil form toxic gases that quickly paralyze and suffocate insects. When poured on grain they form fire-proof, heavier-than-air gases that penetrate the grain mass, killing or driving out all stages of insect life. Yet they are harmless to grain itself.

Tetrafume and Tetrakil differ principally in one respect—the speed of vaporization. Fast acting Tetrafume is made for insect control in concrete and steel elevators, tight wooden elevators and boxcars; and grain conditioning in all types of elevators and boxcars.

Tetrakil, with its slower rate of vaporization is designed to kill insects in grain stored in loosely constructed facilities where gas leakage is a factor — older wooden elevators and all types of emergency and flat storage.

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☐ I would like to have the inspection made within 30 days____ 60 days____ (check one)

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CATTLEMEN

(Continued from page 10)

is non-toxic to ruminants where ample water is available, and because of this, a satisfactory method of supplementation is feeding salt free-choice.

Salt also is an ideal carrier for trace minerals. Water-insoluble trace minerals are preferred when salt is used as a carrier or when trace minerals are added to other supplements.

Iodine supplementation through the use of iodized salt successfully controls goiter or big neck in calves, colts and lambs and hairlessness in pigs. Some of the most dramatic demonstrations of the effectiveness of mineral supplementation have been made with cobalt. Cobalt is necessary for proper bacterial activity in the rumen and for the bacterial synthesis of vitamin B_{12} which is responsible for hematopoesis and promotion of appetite.

Iron and copper must be considered together, for the presence of both is necessary for hemoglobin formation. Copper oxide is recommended where supplementation of copper is necessary. Copper carbonate is also an acceptable source.

Under ordinary conditions, iron is not likely to be as deficient as some of the aforementioned trace elements but it must not be forgotten especially under confined feeding conditions. Manganoferro phosphate has been shown to be an excellent source nutritionally available for iron and manganese.

FEED ADDITIVES — Dr. I. A. Dyer reported that feeding beef cattle is becoming highly competitive. This competition has meant that some small feeders could not make a sufficient profit to stay in business. Hence, larger feed lots and integration have developed to provide more economical units.

The use of feed additives, as appropriate for the area in which cattle are fed, reduces the cost of gain and consequently helps provide a more economical unit. Feed additives should be (1) safe to use and not leave a residue in meat, (2) profitable, (3) effective over a well-balanced ration already containing one or more additives.

Feed additives often have a supplementary effect on performance when fed separately but the effects of the two are seldom additive. The effects of many of the common feed additives, when fed singly, were summarized.

Antibiotics — Chlortetracycline (Aureomycin) and oxytetracycline (Terramycin) are the primary ones that have been fed to ruminants. Zinc bacitracin (Baciferm) is now under investigation and also shows promise as a feed additive. In experiments at the Washington station, antibiotics (Aureomycin and Terramycin) resulted in an increase in gain of from 9-20% with a feed saving of 5-20%. This response is greater than the 6% increase reported over the entire country.

Hormones—Many different hormones and hormone combinations have been tested, but stilbestrol has been used more widely. There is no apparent difference in the mode of action of "fed" and "implanted" stilbestrol. The vast data, to date, indicates stilbestrol produces about a 17% increase in gain and a 12% increase in feed efficiency. Largely because of misuse and because some feeders tend to market feed lot cattle by weight rather than grade, some packers discriminate against stilbestrol fed or implanted cattle. This is particularly true in the West.

Hydroxyzine (Tran-Q)—Experiments at this station with hydroxyzine indicate a beneficial effect from this additive. In one test with 60 steers per group gains were increased from 2.87 to 3.21 lb. per day when hydroxyzine was fed. The feed required per 100 lb. gain was reduced by 92 lb. This is greater than the average increase of 4% which is attributed to this compound.

Tetra Alkylammonium Stearate (Dynafac)—Dynafac has been used in a number of cattle experiments since 1956. Dynafac apparently acts upon the microflora in the digestive tract rather than in the body proper. In testing the effect of Dynafac on growth rate and efficiency of gain at this station, gain was increased an average of .20 lb. per head per day. Similarly, the feed required per 100 lb. of gain was reduced an average of 31 lb. when Dynafac was fed. Results from various tests at this and other stations suggest the response to Dynafac is related to the level of roughage in the ration. That is, it has little, if any, effect when added to a high roughage ration but is quite effective when added to rations low in roughage.

3,3' Diallylhexestrol (Diallyl)—Experimental evidence indicates this compound improves rates of gain by approximately .25 lb. per day and efficiency of feed utilization by approximately 60 lb. per 100 lb. gain. Diallyl also is apparently synergistic with certain other compounds. Diallylcholine and diallyl-Dynafac combinations have been particularly effective at this station. Diallyl has not, as yet, been released by FDA for inclusion in feeds.

Enzymes—Various enzymes are

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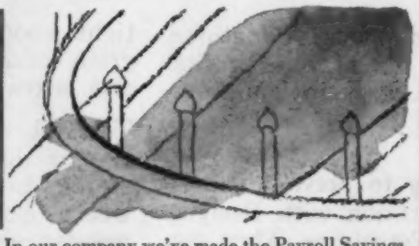

In our company we've made the Payroll Savings Plan available for some time. I thought, naturally, that we had a large participation. But when I checked up a few weeks ago I discovered that only about 22% of our people were making use of the Plan. It's so easy to say, "Sure, this is a fine idea, and I'll sign up next payday."

What our people needed was someone to explain this convenient savings plan *in person;* someone to show them that just signing the card would put this fine thrift program into automatic operation. They needed somebody to invite them to *start right now.*

When I contacted our State Savings Bonds Director, he helped us set up a thorough, informative canvass of everybody on our staff. As a result more than 30% additional employees signed up for this easy, systematic way to buy U.S. Savings Bonds, *regularly.*

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What's A Goo-Ac?

now available for incorporating into livestock rations. Certain enzyme preparations, primarily Agrozyme, have been used rather extensively in beef cattle experiments. The experiments to date with Agrozyme indicate (1) pelleting deactivates some of the enzymatic activity, (2) the high moisture content of grains apparently has little, if any, effect on the response to enzymes and (3) the ration especially with respect to the nutrient content and balance will influence the response of Agrozyme.

Kelp—Kelp is a dried, ground seaweed. Kelp produced in the United States has a relatively small amount of protein and fat but contains over 30% minerals. A Norwegian kelp, Ascophyllum nodosum, has been used in 3 experiments at this station. This product has given from .18 to .30 lb. increase in gain when fed as 2% of the ration. It was particularly effective when fed with Agrozyme.

Goitrogens—Manipulation of the metabolic rate of an animal offers a great potential to the livestock industry. Through such a procedure, rates and efficiency of gain will be improved. Also, regulating the percentage of fat and lean in the carcass is a possibility when the rate of metabolism is controlled.

FORAGE TESTING PROGRAM AND COMPUTING CENTER SERVICE—Dr. Wendell Ham informed those present of two new services that the Washington State Agricultural Experiment Stations, in cooperation with the Agricultural Extension Service and Washington State University Computing Center, are offering to Washington cattlemen.

The first of these services is the forage testing program. The purpose of this program is to make available a means for accurately evaluating the quality of the forage they are producing and feeding. The analyses consist of moisture and crude protein for hay and moisture, crude protein and pH for silage. In addition, if desired, the crude fiber also will be determined.

The second of these new services is the use of the computing center in the balancing of least-cost rations. It enables a livestock producer to obtain the best and cheapest ration using feedstuffs which are available to him.

The feeder furnishes information on (1) the kind of cattle (feedlot, wintering or growing), (2) feeding stuffs available, with cost of each and (3) feed additives to be fed and their cost. The computing center provides the feeder with the (1) percentage and pounds per ton of each selected ingredient to be included, (2) cost of this ration per ton and (3) the approximate cost per pound of gain. At the same time, such factors as the bloating potential of feedstuffs, palatability, and possible toxicity are taken into consideration before the final recommendations are returned. The computing service marks an important development in providing accurate information in the balancing of rations of optimum nutritional value and lowest cost.

FEED COST AND CATTLE PRICES—Karl Hobson, extension marketing price specialist, reported present conditions favor a larger crop of hay but a smaller crop of feed grains in the Pacific Northwest in 1960. This does not mean prices for either will be greatly different from last year.

In Washington, larger hay production is likely to be favored also by higher yields. Even if hay production is increased substantially, we may not have a surplus. Cattle and sheep numbers increased 5% last year, and the increase appears to be continuing this year. Also, a severe winter would greatly increase the needs for hay.

A moderate decrease in feed grain production in the Pacific Northwest seems likely for 1960, but supplies should be ample at prices not greatly different from those of the current feeding season. Even if feed grain production is reduced some in the Pacific Northwest this year, supplies for feeding are likely to be ample unless barley exports are heavy.

The demand for stocker cattle is likely to remain strong during most of 1960, because soil moisture levels are now plentiful throughout most of the nation, indicating a good pasture and feed season. This, plus reduced slaughter of hogs in the last half of the year, is likely to keep prices for most kinds of cattle on a fairly even keel.

In the absence of drouth or depression, the strong demand for stocker cattle plus reduced pork supplies may keep the downtrend in cattle prices moderate until 1962 or 1963. The low point in cattle prices should be about 1965. Drouth or depression could bring a sharp price drop at any time and might bring the low point of the price cycle at an earlier date.

PRODUCING BEEF FOR THE CONSUMER—Eugene H. Rupnow indicated the following can best summarize consumer preference of meat. A consumer wants tender meat at a reasonable price, with very little fat and bone, that can be prepared quickly and easily, has acceptable flavor and juiciness, and can be purchased at a conveniently located store.

Producing beef for the consumer is no easy task. As a rule, fatter carcasses will have tenderer meat than carcasses with less fat. There are exceptions to this rule. In cutting meat for the customer, the amount of fat on the outside can be altered whereas that within the meat cannot. The amount of fat within the meat, marbling, is desired as it is an excellent indicator of tenderness. Feeding is a very successful method of producing tender meat. However, the long time goal should be to select animals with tender meat. Tenderness is, at least partially, an inherited trait.

THE FUTURE OF BEEF CATTLE PRODUCTION—Fred Dressler, president of the American National Cattlemen's Assn., was the guest speaker at the beef day. Mr. Dressler first noted the history of cattle produced, then discussed the present situation, followed by a look into the future of beef cattle production.

Many factors will influence beef cattle production in the future, he reported:

(1) Increase in population—With the population expected to reach 210 to 246 million by the year 1975, he feels that we shall need 100 million more cattle and 5 million more calves. This, in conjunction with an increase of other livestock and poultry, offers the soundest approach to solving our mountainous surplus grain problem.

(2) Breeding—Production testing will be more widely used in the future with more carcass work being added to the programs. If we are to maintain a high per capita meat consumption, inefficient cattle should be eliminated.

(3) Feeding—The feeding of cattle constitutes the greatest single cost item of their production. It is important, therefore, that feeding practices be as satisfactory and economical as possible. There will be more and more forced production, more rapid gains and earlier market ages. This means grain feeding of cattle will continue to increase. Without doubt there will be wider use of additives, more use of commercial feeds and more pelleted forages and all-pelleted rations.

(4) Marketing—Mr. Dressler predicts many transformations in livestock marketing. Larger livestock production units and continued decen-

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tralization of the meat packing industry and a decline in the relative importance of terminal markets will occur. Also, continued growth of direct marketing, super markets and commercial feed companies is expected.

(5) Meat Exports and Imports—Quotas and tariffs always have been in politics and are subject to change. We need to increase efficiency of production as a means of meeting foreign competition.

(6) Integration—Integration is on the increase in farming. It is of two kinds—vertical, which refers to adding another type of business and horizontal which refers to enlarging by merging two similar businesses. The challenge to agriculture is to guide the movement so farmers will reap the rewards.

(7) Automation—In the future, 50% of the time and 80 to 90% of the lifting in the livestock business will be eliminated.

(8) "The Steer of Tomorrow"—Beef producers should emulate broiler producers. The American National Cattlemen's Assn. plans to call together all segments of the beef cattle industry and decide on the "steer of tomorrow." Then, with the aid of research scientists and practical operators, we shall progress toward these goals.

Milwaukee Firm Plans New Grain Magazine

MILWAUKEE — Editorial Service Co., Inc., publisher of Feed Bag Magazine, will bring out a new magazine called Grain Age this fall, according to Eldon H. Roesler, company president.

Mr. Roesler said the new magazine would serve the grain storage and merchandising industry and that the first issue would be dated October, 1960, and regular monthly publication would start with the January, 1961, issue.

Arkansas Tests Unextracted, Cooked Soybeans for Swine

FAYETTEVILLE, ARK. — Results of an experiment at the University of Arkansas suggest that cooked, dehulled soybeans with oil unextracted may be used as a protein supplement for swine.

Earlier experiments at the Arkansas agricultural experiment station indicated that cooked, dehulled and unextracted soybeans can replace soybean oil meal in broiler chick rations, too.

In the swine experiment, the unextracted soybeans did serve as a suitable protein supplement for growing and finishing pigs from 80 to 200 lb., it was reported by Dr. P. R. Noland. Basal ration used in the test included the following:

Ground yellow corn	77.75 lb.
Soybean oil meal (50% protein)	18.50 lb.
Dicalcium phosphate	1.25 lb.
Ground limestone	1.00 lb.
Salt	00.50 lb.

To each 100 lb. of feed was added 220,000 I.U. vitamin A, 20,000 I.U. vitamin D, 200 mgm. riboflavin, 500 mgm. pantothenic acid, 1,250 mgm. niacin, 5,000 mgm. choline, 1 mgm. vitamin B_{12}, 1,000 mgm. Terramycin, and 13 grams zinc sulfate.

To test the effect of adding only the soybean oil, 1.25%, 2.50%, 3.80% and 5.05% of crude soybean oil was used to replace an equivalent amount of corn in the basal ration fed other pigs. These quantities of soybean oil equalled the amounts of oil added with the various levels of unextracted soybeans.

The pigs were fed in pens with concrete floors and had access to the 3/16-inch pelleted feed and water at all times.

Detailed results of the experiment may be observed in Table 1. In general, increasing the levels of cooked soybeans improved the rate of gain and reduced the feed required for a pound of gain.

This improvement was apparently not due to the fat added in the whole beans since increasing the level of crude soybean oil did not improve gains and increased the feed required per pound of gain.

No consistent trend was apparent in the carcasses of the pigs fed the various rations. It appeared, however, that substituting cooked, unextracted soybeans for one-fourth or half of the soybean oil meal in the ration produced leaner and longer carcasses than did the other rations.

The cooked, unextracted, dehulled Lee variety beans contained 34.4% protein and 19.4% fat. The soybean oil meal contained 50% protein and 0.5% fat. To destroy the inhibitor of the digestive enzyme, trypsin, present in the whole soybeans and to improve availability of the protein, the dehulled beans were cooked in a stack-type cooker at atmospheric pressure with 30% added water.

TABLE 1—Effects of Unextracted Soybeans and Soybean Oil in Swine Rations
(Nine pigs per treatment; average initial weight 80 lb., final weight 195 lb.)

Per cent substituted in ration	Average daily gain	Feed per lb. of gain	Average backfat thickness	Loin eye	Carcass length	Five primal cuts in carcass
	——Pounds——		In.	Sq. in.	In.	%
Unextracted soybeans*						
0	1.86	3.58	1.77	4.28	28.6	58.1
7	1.85	3.46	1.43	3.64	29.3	59.4
14	1.97	3.22	1.43	4.25	29.4	61.1
21	1.89	3.39	1.50	4.06	28.8	57.5
30	2.05**	3.16	1.58	3.56	27.9	60.8
Soybean oil†						
1.25	1.99	3.21	1.51	3.51	28.8	59.1
2.50	1.91	3.51	1.55	3.72	28.7	59.8
3.80	1.84	3.76	1.63	3.62	28.9	59.3
5.05	1.76	3.71	1.49	3.84	28.5	60.0

*Replaced soybean oil meal on an equal protein basis.
†Replaced an equivalent amount of corn.
**Gained significantly faster than those fed no dehulled, unextracted soybeans (P equalled 0.05).

Book on Chemical Additives Labeled 'Blood-Thirsty'

WASHINGTON—An all-time high in "blood-thirsty pen-pushing" is the way Dr. William J. Darby, department of biochemistry, school of medicine, Vanderbilt University, describes "The Poisons in Your Food," a new book by William Longgood.

Dr. Darby's book review, printed in Science, a publication of the American Association for the Advancement of Science, says the book "deals with the important problem of chemical additives but from the bias of the non-scientific, natural food-organic gardening cult . . . "

The review, reprinted from Science by permission of the American Association for the Advancement of Science follows:

"This book is an all-time high in "blood-thirsty pen-pushing." It deals with the important problem of chemical additives, but from the bias of the nonscientific, natural food-organic gardening cult—the followers of J. I. Rodale (publisher of Organic Gardening and Farming, Encyclopedia of Organic Gardening, and so forth), of Natural Food Associates, Inc. (publisher of Natural Food and Farming Digest) and others of the same convictions. Most of the "authorities" named in the book are the cult leaders, their gods or a few true scientists whose work or expressions have been taken either out of context or out of time and used in such manner that they seem to support the doctrine of the believers. The quoted voices of authority and knowledge on the 'scientific facts' include Time, Police Gazette, Prevention and the Bonn correspondent of the Economist. The book is an irresponsible bid for wide sales through sensationalism. Indeed, one of the author's own definitions describes well my appraisal of it: '(an effort to) beguile, deceive and defraud the housewife by making her think she is getting something she isn't'."

"Well-Known Methods"

"The muckraking in this book employs all well-known methods of the irresponsible purveyors of the sensational. Expenditures for life and hospital insurance, for aspirin, and for medical care are cited as indicating a damaging effect of chemicals in foods! The reader is told that '. . . the nation's health is steadily deteriorating.' He also learns that 'natural foods . . . have a delicate chemical balance that was established by nature for a purpose. These naturally occurring chemicals exist in their specific proportion for a specific purpose . . . If a larger or smaller quantity were desirable, the amount established by nature through the evolutionary process would have been larger or smaller.' The author repeatedly implies that scientists, whose uncited evidence disagrees with his views, have either been bought off by industry or by government, or that they may be deliberately prejudicing their work and reports because their university receives funds from the Public Health Service or from industry, or even because the scientist

Here's the professor's advice to the feed manufacturer . . .

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So wrote a professor of animal science at a large midwestern university in response to a letter from a Jamaican feed manufacturer asking which magazine would be most helpful in his business.

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hopes that after retirement he may be able to get an industrial job!

"The author's fascination with the cult of 'natural' versus 'synthetic and artificial' is well revealed in his presentation concerning meat. The average steak or roast, he writes, 'probably comes from a cow born through artificial insemination, raised with an artificial sex hormone implant in its ear, fed synthetic sex hormones, . . . slaughtered—generally by an inhumane method—and sold as meat.' In his association through name-calling, he reaches a high in stating that 'possible sexual repercussions' on human beings have been commented on by 'Dr. Christian Hamburger of Copenhagen, who helped the ex-G.I., George Jorgensen of New York become 'Christine' and Charles McLeod of New Orleans convert to 'Charlotte'." The device of conjuring up fears of impotence or of feminizing influences is an age-old one for those wishing to oppose science. Among primitive peoples, this device is often employed by the witch doctor to oppose the introduction of effective scientific control or treatment of disease.

"Charge Ridiculous"

"Mr. Longgood's book will no doubt be welcomed by those who believe with him that the public is the victim of a giant conspiracy joined in by the Food and Drug Administration, the American Medical Association, the 'big chemical companies' and, apparently, scientists in general — a charge so ridiculous that it deserves only to be ignored. Mr. Longgood's book will readily be recognized for what it is by any scientist with so little to do that he takes time to read it.

"Finally, it is to be hoped that the great mass of the American public is sufficiently intelligent and logical to recognize that writers and publishers sometimes fail in their responsibility to provide factual and objective information on important issues of the day despite the availability of authoritative, considered source material from organizations such as the Food and Agriculture Organization of the United Nations (FAO), the World Health Organization of the United Nations (WHO), the Food Protection Committee of the Food and Nutrition Board of the National Academy of Sciences-National Research Council (FPC), the Food and Drug Administration, the U.S. Department of Agriculture and other responsible bodies."

Seed Plant Sold

JUNCTION CITY, ORE. — The closed Willamette Valley Seed Co. property, Junction City, was sold at a foreclosure sale and is being reopened as a branch of Womco Mills, Western Oregon Milling Co., Philomath. Holard Lilly, Corvallis, is serving as temporary manager of the Womco operation.

Once Too Wet, Corn Now Being Accepted For Government Seal

DES MOINES—Crib upon crib of Iowa corn that previously failed to pass moisture tests is moving into government storage.

Paul Wood, program specialist in the price-support program for the Iowa Agricultural Stabilization and Conservation Committee, reports that warm and windy weather—just what corn growers needed — has done a great deal to eliminate the problems farmers faced because of their stocks of wet corn.

To the feed manufacturer this means a larger opening in the door to more sales to producers who have been shoveling wet corn to their stock to get what feeding value they could out of it before it spoiled.

Mr. Wood notes that many farmers helped the situation by hiring commercial drying outfits to reduce the moisture content so their corn would meet loan requirements.

Associated Press reported that Mr. Wood said corn loan rejections are quite low now even though a lot of corn offered for sealing in March didn't make the grade.

Mr. Wood said he wouldn't be surprised if the total amount under seal by the May 31 deadline would be 172 million bushels — about 10 million bushels more than county Agricultural Stabilization and Conservation offices estimated.

The latest report, as of March 31, showed 147 million bushels of corn under seal. That figure is only 15 million bushels short of the March estimates, Mr. Wood said.

Some of the corn rejected for sealing in March because of "real high moisture content" is moving off the farm to warehousemen, who in turn are selling it to feeders.

Also now moving off the farm into other channels is corn which might have been damaged since harvest and is spoiling or spoilage is threatened, Mr. Wood said.

FARM SUPPLY FIRM

DENHAM SPRINGS, LA.—Farm Supply & Feed Co. has been granted a charter to engage in a farm supply business. Authorized capital stock is $50,000.

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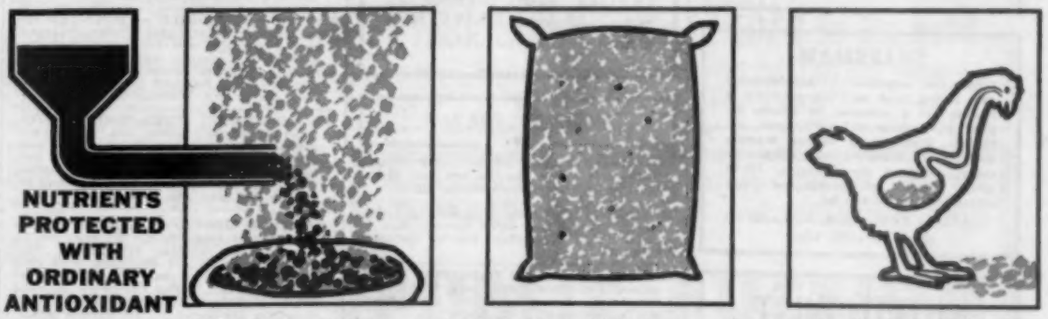

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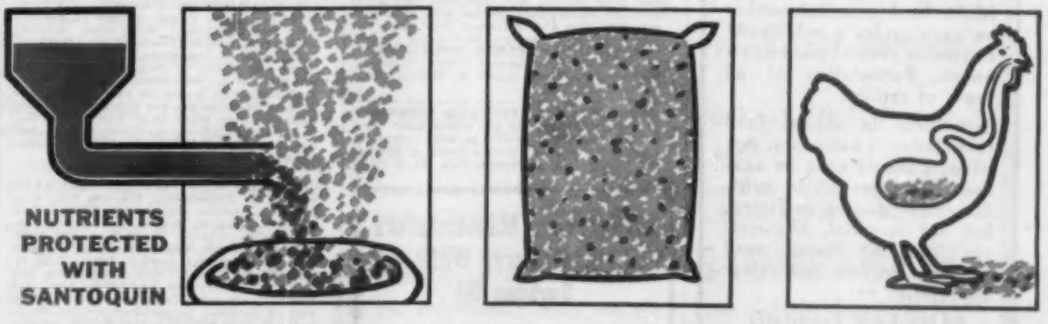

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ONE USED MODEL 80 JACOBSON ONE-ton vertical feed mixer; one used Jacobson molasses blender attachment. This machinery is in A-1 condition, used only with dry feeds in our experimental department. Any replies are to be directed to A. P. Boisen, La Crosse Trailer Corporation, 418 Gould St., La Crosse, Wis.

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BULK FEED DELIVERY SEMI TRAILERS —2-24 ft. Bulkmaster trailers, full bulk auger unloading, single axle, 36 in. chain bottom conveyor, rebuilt independent engine drive. 1-24 ft. Baughman, full bulk, 6 compartments, auger unloading, tandem axle, independent engine drive. 1-35 ft. Pak-Master model PM50 combination bag and bulk, 1½ years old, 36 in. belt over chain conveyor, full hydraulic drives, sliding tandem, independent engine drive. 1-24 ft. Pak-Master model PM60 combination bag and bulk, air unloading system, steel top, 9 ft. spread tandem, 36 h.p. independent engine drive. Above units in good repair. Write Gaddis Bros. Mfg. Co., Inc., Walford, Iowa, for further details.

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Chevrolet tractor, 1955, eight cyl., stub nose, straddle tanks, hydraulic and air, good condition, good rubber.
This is a real combination for any business with a large volume. Take 5 feeds or 5 orders on one trip.
A. Any business that hauls its own chows from mill, bulk station or rail site.
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C. Any business that is also in the egg or poultry business.
All four of these units can be bought for $10,000.00 which is less than the bulk unit alone would cost. We would keep the first two units if not needed. Address Ad No. 5865, Feedstuffs, Minneapolis 40, Minn.

MACHINERY FOR SALE

FOR SALE—JACOBSON AJAX 24F9 MILL, with 75 H.P. Westinghouse, frame 445-S motor, on base, with coupling, magnet, piping, screens. Good condition. Available soon. Write or phone Harold Attebery, Granville, Ohio.

STATIONARY DAFFIN FEED-U-NIT — Hammermill, traveling feed table, mixer, molasses blender, molasses tank, meter and pump, 100 H.P. diesel, special concentrate feeder — all mounted on one frame—a self-contained unit that can be installed and working in one day. A big value package for only $6,150. Address Ad No. 5895, Feedstuffs, Minneapolis 40, Minn.

FOR SALE: 1 — SPROUT WALDRON UNused 335 cu. ft. ribbon mixer, 50 cu. ft. ribbon mixer, 2 — Robinson 125 cu. ft. ribbon mixers. Unused No. 9 Sturtevant rotary blender, 150 cu. ft. T304 stainless steel dry material handling system including: 1500 cu. ft. weigh hoppers. AJAX "Loveyer" shaker conveyors, bucket elevators, screw conveyors, all stainless steel. Send for details. Perry, 1403 N. 6th St., Philadelphia 22, Penna.

MACHINERY WANTED

ALL KINDS OF GOOD USED GRAIN processing machinery. E. H. Beer & Co., Inc., Baltimore 24, Md.

WANTED—ONE (3-TON) NO. 548 HOWES Eureka mixer, without motor. O. W. Meyer, Napoleon, Ohio.

WANTED—BULK SEMI TRAILER TYPE feed truck. 12 ton capacity. Address Ad No. 5864, Feedstuffs, Minneapolis 40, Minn.

WANTED TO BUY — RICHARDSON scales, bag closing machines and other good mill, feed and elevator equipment. J. E. Hagan Mill Machinary, Jefferson City, Mo.

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EXPERIENCED GRAIN EXECUTIVE wants new opportunity. 15 years' background includes financing, merchandising, traffic, hedging, plant operations, processing, blending. College graduate. Can invest. Address Ad No. 5904, Feedstuffs, Minneapolis 40, Minn.

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WELL ESTABLISHED FEED BUSINESS (popular franchise) and mobile grinder. Smith Agency, Redwood Falls, Minn.

FOR SALE—FEED AND FARM SUPPLY business in progressive northern Colorado town. Featuring Purina, DeKalb and other valuable franchises. Grossed $154,000 volume in 1959. Contact M. O. Shrader, Estes Park Route, Loveland, Colo.

SALES REPRESENTATIVES — DO YOU want to add baler and binder twine to your present lines on a commission basis in an exclusive area? We are an old established firm, and offer good salable twines. Address Ad No. 5862, Feedstuffs, Minneapolis 40, Minn.

CENTRAL CALIFORNIA FEED MILL FOR sale. Operational mill now doing 400 to 600 tons per month. Vast potential for increase in area. Absentee owner will sell completely or will participate. Prime location, a going operation. Please write Ad No. 5875, Feedstuffs, Minneapolis 40, Minn.

NORTH TEXAS FEED MILL FOR SALE— Because of increasing demand for our products we must make plans to build a larger production facility. We are interested in selling our present plant consisting of a feed mill, warehouses, office, and grain storage elevators. Located in northeast Texas. Please write to Ad No. 5765, Feedstuffs, Minneapolis 40, Minn.

FOR SALE—HATCHERY AND POULTRY farm. Latest automatic equipment, on 4-lane highway, ideal climate, attractive property, wholesale and retail outlet, large trade area, diversified farming, profitable business, with expansion possibilities along feed line. Photographs and details upon request. Reason, retirement age. Address Ad No. 5905, Feedstuffs, Minneapolis 40, Minn.

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COMPLETE ORGANIZED FEED MILL AND RETAIL STORE

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Canada Feed School Program Completed

GUELPH, CANADA—The program has been completed for the Feed Industry Management School to be held June 6-9 at the Ontario Agricultural College.

Among the broad topics to be discussed will be the manager's role, automation, credit, designing the mill and selecting equipment and sales promotion. A full program of speakers has been arranged with some evening sessions also.

The program will open the morning of June 6 with a talk by Ewert Stiver, manager of Stiver Bros., Unionville, on "The Manager's Role in a Retail Feed Business." Following this will be a "Report on Feed Mill Survey in Western Ontario, 1959," by Prof. S. H. Lane, Ontario Agricultural College.

One of the features of the afternoon program will be a talk on "Automation in Feed Production," by Dr. W. S. Young of the host school.

Finances and Records

"Financial Management and Credit Control" will be the major topic under discussion June 7. In the morning, "Why Keep Records?" will be discussed by Lloyd Vivian, manager of Walter B. Job, Ltd., Burlington, and "What My Records Should Tell Me," will be the title of a talk by Cliff Pettigrew, management services, U.C.O. The morning will be closed out with a panel discussion on "Pricing—How to Develop Satisfactory Margins and Meet Competition." Chairman will be M. H. McPhail, O.R.F.D.A., with panelists James Morris, Dorchester; Gordon McNern, Simcoe; Robert Lawson, Stewartstown, and Alan Lindsay, Renfrew.

Among the talks in the afternoon will be "Can You Afford to Modernize and Expand Your Business?" by Peter Regan, credit manager, Ralston Purina Co., Ltd., "Techniques for Effective Credit Control," by Ray Emmons, Quaker Oats, Ltd., Peterborough, with a summary by Prof. W. M. Braithwaite of the host school. In the evening, "Financing Farmers With Special Reference to the Role of the Feed Dealer" will be the topic of Harold Cook, vice president of Toronto Elevators, Ltd.

The morning program June 8 will include four talks: "Important Considerations in Mill Design and Equipment Selection" by Oak B. Smith, Wenger Mixer Manufacturing Co., Kansas City; "Handling Incoming Ingredients and Finished Feeds in Bulk" by Arthur Stegner, Butler Manufacturing Co., Kansas City; "New Developments in Feed Formulation," by W. K. Meyer, nutrition manager, Canada Packers, Ltd., and "New Developments in Feed Milling Equipment" by Don Martin, manager of Martin Feed Mills, Ltd., Elmira.

Afternoon talks will include "Designing the Typical Local Feed Mill for Ontario" by W. J. Lehman, millwright, Delhi, Ont., and a panel discussion on "Problems Involved and Principles to Observe in Remodeling a Mill." Chairman will be George Fuller, manager of Brant Feed & Seed Co., with panelists Harold Hayhoe, manager, Hayhoe Brothers; Walter Linton, manager, Strong-Scott, Ltd.; Jordan Sullivan, vice president, Sullivan Mill Equipment, Ltd., and William Rath, Canada Packers, Ltd.

The final day will be devoted to a sales promotion course.

Booklet Discusses Poultry Feeding

STILLWATER, OKLA. — Feed formulas for broilers, growing pullets, laying hens, growing turkeys and breeder turkeys have been compiled by members of the poultry science department at Oklahoma State University, and published in a booklet titled "Poultry Feed Formulas."

Some topics covered in detail include recommended ingredient substitutions, feeding recommendations, starter and grower rations, turkey starter and grower rations and breeding rations.

This series includes feed formulas with and without supplemental fat. Another topic covered in these poultry feed formulas is a series including the feeding of whole grain.

California Truckers Petition Rate Hike

STOCKTON, CAL.—The California Trucking Assn. has filed a petition with the Public Utilities Commission requesting increased class and commodity rates on grain and rice. The average increase asked is about 3%, but not less than one half cent per 100 lb.

The Public Utilities Commission granted increased trucking rates last November. The truckers base their new request for an additional increase on "higher taxes and labor costs."

An emergency hearing was called last week by PUC to review this proposal.

GMI Grain Personnel

MINNEAPOLIS — J. O. Kocher, manager of Oklahoma and Hopkinsville, Ky., grain operations for General Mills, Inc., Minneapolis, has been named Oklahoma and Texas grain manager with headquarters in Enid, Okla., it was announced by J. S. Gage, vice president and director of grain operations for the company.

H. Dean Campbell will become grain buyer for all locations in Oklahoma and Texas, and assistant to Mr. Kocher. Laurel Harris was named grain accountant and local grain buyer at Amarillo, Texas, and Eugene Berry was named local grain buyer at Wichita Falls, Texas. The Texas-Oklahoma grain department will handle all grain functions for the General Mills mills at Wichita Falls, Amarillo, El Reno, Okla., and Hopkinsville and for the terminal elevators at Oklahoma City and Enid, Mr. Gage said.

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Niagara Double Screen Separators
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Illinois Feed Firm Puts Out Weekly Bulletin

By Al P. Nelson
Feedstuffs Special Writer

Quite a number of alert feed mill owners issue a monthly mimeographed or printed bulletin to circulate to farmers in the trade area, but the Kauffman Feed Mill, Waterman, Ill., issues a weekly bulletin.

Carl Rylander, sales manager of the feed firm which is owned by Howard Kauffman, is the editor of the weekly HO-KA Chat bulletin, and he reports that farmers tell him they like it and often comment about the material printed in it.

The bulletin takes its name from the firm's line of HO-KA feed, of which there are 34 registered formulas. The bulletin is a single sheet of 8½ by 13½ in. mimeograph paper. It is mailed weekly in folded form to 3,300 rural box holders in the trade area which has a radius of about 25 miles from Waterman.

The Kauffman Feed Mill has its own mimeograph machine, and one of the two office girls cuts the stencils. The cost of issuing the bulletins averages about 3¢ per copy, of which 2¢ is postage, states Mr. Rylander. Last year the firm manufactured and sold 8,900 tons of HO-KA supplements and complete feeds, with custom mix tonnage extra, and Mr. Rylander attributes a sizable part of this business to the regular weekly contacts made by the HO-KA Chat, backed up by the field work of two salesmen.

"We have a large exhibit each year at the Sandwich, Ill., Fair," reports Mr. Rylander, "and many farmers who visit our booth tell us they like the bulletin. So do the numerous farmers who come to our mill each week."

In formulating his editorial policy, Mr. Rylander reports that he puts into the bulletin a summary of the conversations he has had during the week with farmers at the mill. Thus, he reports this material to all farmers in the area. He feels that if a group of farmers are interested in a seasonal feeding problem, that the rest of the farmers in the area will be interested, too. Thus far, this editorial policy has worked out well.

Mr. Rylander puts sound feeding advice into his bulletin. He also lists many HO-KA feed formulas and their breakdown costs. In addition he counsels farmers on feed economies.

In a recent bulletin, he said, "If you have to buy some grain, we also have these rations in complete pelleted form here at the mill. We believe there is no better place to use a complete ration than in the sow program.

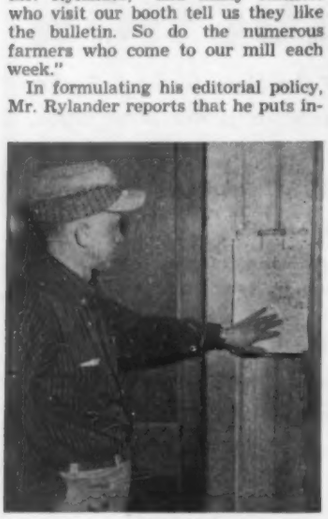
"If you prefer to use your grain with a supplement, we here at Kauffman's are prepared to offer you our HO-KA 30% Ka-E-Lac sow supplement—another fine way to handle gestating sows.

"We know there are a lot of sows to farrow in the spring that are getting only corn and water. I would feel better about customers if I had lost them to a different program from ours rather than think that these sows were not getting any protein at all. I feel this way because I know that these sows will end up with small, unthrifty litters that will cost you money. . . ."

In another bulletin, Mr. Rylander wrote, "At the present time, 20- and 22-week-old started pullets are selling for $2 per bird. The price of large white eggs at the present is 32½¢ per dozen. I talked to a customer this morning whom I consider a good poultryman, and he said he had a return last year of $138—for every $100 worth of feed fed.

"I point this out to show you that there is a return available in the poultry business. Another factor to be considered is the price you pay for eggs for the family table. Large whites are selling for 51¢.

"The Kauffman Feed Mill production of feed is geared to poultry feed. Because of our large turkey production from breeders to the finished bird, we use and have available the best poultry nutritionist in the country. We follow very closely, many times are way ahead of, the newest developments in the country. We have available a complete line of poultry feeds, a pharmaceuticals and poultry information. If the birds show symptoms of sluggisnness or a reduction in production due to some mild health factor, we are prepared to add antibiotics or other health remedies to the ration right here at the mill."



CONSULTS FILE — Carl Rylander, manager, consults a file of his firm's news bulletins. These bulletins are posted on this file in the sales room so customers can check back on various issues.

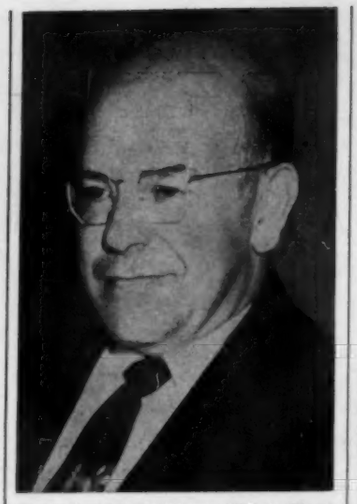
FEED PRICE BOARD—This is the firm's feed price board which is posted in an easily accessible location in the sales room.

Also Raises Turkeys

In addition to manufacturing large tonnage of its own registered HO-KA feeds, the Kauffman organization also raises 100,000 turkeys annually on a farm near Waterman. All feed for the turkeys is produced at the Kauffman mill. The firm also has its own breeding farm, hatchery and dressing plant in the area. Through this varied experience, the firm is well able to help other poultry raisers with feeding and management problems.

Mr. Rylander reports that about 70% of the mill's production is in hog feeds. The rest is in dairy, poultry and beef cattle rations. About 90% of the feed production is sold in bulk. HO-KA feeds are built by the Kauffman firm from the ground up, so to speak.

Three New Leader trucks, each with a 6-ton capacity, are used for delivering feed in bulk. The discount on bulk is $6 per ton. Delivery costs are 15¢ per mile, including round trip mileage. The average feed order processed runs about 2½ tons. About 10% of the customers get up to 10 tons at a time.



FEED FIRM OWNER—This is Howard Kauffman, owner of the Kauffman Feed Mill in Waterman, Ill.

To handle its production of manufactured feeds and custom mix volume, this firm operates its mill on an 18-hour-a-day basis, from April 1 through Nov. 1, with four to six men working a 60-hour week.

A large portion of the output of the mill is pelleted on a 50 h.p. California mill, with a capacity of 6 tons per hour. Other equipment includes a 32-inch Diamond attrition mill; a 1-ton Howe mixer, capacity 2 tons; a 2-ton Kelly Duplex mixer; a Kelly Duplex molasses blender and a Zip corn sheller. The elevator legs, hoist and drags, also, were furnished by Kelly Duplex.

The firm has nine storage bins for complete feeds and concentrates. Each bin has a capacity of 8.2 tons. All the firm's output of complete feeds and concentrates is pelleted, reports Mr. Rylander. The grinding and mixing rate on custom work is 13¢ a hundredweight. Corn shelling is done at 7¢ per bushel.

Grain Purchase Plan

The Kauffman Feed Mill operates a grain purchase plan and has about 8,000 bu. storage capacity for this purpose. The feed firm signs an agreement with a farmer to buy 2,500 bu. of corn from him over a certain period of time for $1 per bushel. The farmer has until July 1 each year to sell his corn to the Kauffman firm for this price. When the feed mill calls in portions of the 2,500 bu. as needed at the mill, the farmer is paid the market difference. The mill also has the right to call for the grain when the schedules demand it.

If the farmer desires help in financing his feed purchases, he can enter into a Kauffman feeder contract. On this contract, the feeder pays a $2 per ton finance charge on concentrate through livestock marketing period, and $1 per ton on complete feeds. The Kauffman firm handles its own paper on most of these contracts, reports Mr. Rylander.

On regular book accounts, the farmer gets a 2% cash discount if he pays his bill by the 15th of the month following purchase. If an account is not paid within 60 days, the firm gets a bank judgment note.

The labor costs of production per ton of feed at the mill are:

Manufacturing and processing	$1.153
Custom processing	1.543
Pelleting	.306
Delivering	.502

Because of its weekly bulletin to farmers, Mr. Rylander says the firm does not need to hold too many feeder education meetings as otherwise might be required. However, a few such meetings are held occasionally throughout the area. The feed firm also uses some classified ads regularly in a De Kalb newspaper and also has some spot announcements five days per week on a radio station in the same city.

MAP SHOWS CUSTOMERS — This map on the wall has pins in it showing the location of the firm's customers. In the picture, a new customer shows Carl Rylander, manager, where he lives.

Poultryman Reports On Outlook for '60

COLUMBUS, OHIO — Dr. P. C. Clayton, Ohio State University extension poultryman, reports there is good news coming up for poultrymen. He says summer egg prices should be well above 1959 levels.

Dr. Clayton cites fewer layers and reduced supplies of eggs as responsible factors in lifting prices. Poultrymen started this year with the smallest number of layers on record.

On April 1, the nation's laying flock was 4% below the same date last year. According to the U.S. Department of Agriculture, 37% fewer layer-type chicks were hatched during the first three months of this year than during the same period a year ago.

He also points out that in the Southern regions, where commercial egg production has been increasing rapidly, hatches during the last six months were down almost 40%, probably due to poor prices, storm losses and tighter credit.

The poultry specialist expects egg prices during the April-June period to average 5 to 6¢ a dozen above prices during this period last year. He sees egg prices the last half of this year averaging well above the 31¢ for the last half of 1959. High egg prices at the end of this year and early in 1961, he says, could result in over-expansion of egg production the last half of 1961.

Here are Dr. Clayton's predictions for broiler and turkey prices: Broiler prices during the next several months should remain above those of last year. A record crop of turkeys is in prospect. Prices probably won't go above the 22@23¢ level if the April-June hatch of heavy breed poults is as large as last year. Prices of light breed turkeys should remain well above last year's prices during the holiday season.

June 14 Effective Date For Alfalfa Meal Rates

KANSAS CITY, MO. — New rail rates for alfalfa meal from WTL territory to southwestern territory, including points on the lower Mississippi River such as Memphis, Vicksburg, Baton Rouge and New Orleans, are now in the process of publication and scheduled to become effective June 14, reports a recent bulletin of the American Dehydrators Assn., quoting Ray Cox, Acme Traffic Service.

"The railroads are attempting to secure authority from the Interstate Commerce Commission to advance this effective date, but it is questionable as to whether or not they can get the date changed," Mr. Cox was reported as saying.

TRAFFIC

(Continued from page 7)

ate under the same basic tariff rule on all southern railroads. The SFA will place the recommendation on public docket, allowing all interested shippers to testify, before it makes its final decision.

The executive traffic committee named another subcommittee to study the need for a similar uniform tariff for trunk line territory, operating east of Chicago and north of the Ohio River.

The committee also received the report of the railroad research group on trunk line domestic freight rate adjustment, regarding bringing the domestic rate more in line with export rate. Indications were that the confidential report suggested a rate reduction—but possibly not as low as was proposed last summer by the eastern poultry federations and associations. No indications were available as to when any change in domestic freight rate would become effective.

The committee also discussed National Soybean Processors Assn. rules which require a seller's weight to govern sale. Presently, railroad claim departments require both official origin and destination weights in settling any losses claimed by the buyer.

NUTRENA

(Continued from page 1)

complete formulas will come initially from Staley plants at Decatur and Riverdale, Ill., and subsequently from two or more of Nutrena's 15 mills.

Included in the transfer are feed formulas, inventory, accounts receivable, feeding contracts, warehouse leases and service equipment. No real estate is included in the sale, the joint announcement said.

Merger Under Way

The merger of Staley's formula feed sales and dealership network into Nutrena's 26-state production and sales organization is under way, Mr. North said. A series of joint meetings are being held to acquaint new personnel and customers with Nutrena's research, electronic formulation, sales development, bulk handling, advertising, credit, customer service and food production systems, including "Pigloo," "Calfloo," poultry houses and other special methods.

Nutrena plans to absorb much of the Staley formula feed sales organization, Mr. North said, and assignments of personnel are being worked out individually.

Reasons for Selling

"Changing patterns in the farm feed business and the trend to larger, integrated operations, coupled with Staley's rapidly expanding research and development program for other corn, soybean, chemical and grocery products, led to the Staley company's decision to center its attention on these lines," Mr. Rhodes said.

"The basic product orientation of Nutrena, its nationally prominent position in feed production and distribution, and the resources and progressive policies of the entire organization all assure continued good service and new production developments for dealers and feeders," he noted.

"Staley will continue production and distribution of 'Sweetone' molasses concentrate, 'Rockland Diets' for laboratory animals and 'Staley's' corn feeds and mixes, soybean meals and mill feeds. They are among the company's more than 600 corn, soybean and chemical products for the food, paper, textile, feed and other industries."

Mr. North said the additional business, "coming in Nutrena's 40th anniversary year, is a logical extension of our steady growth and will make more efficient use of our production facilities, particularly a new push-button mill at Peoria, Ill."

In a letter to Staley formula feed dealers, Mr. North said, "We view this change as a wonderful mutual opportunity and we pledge ourselves to serve you in a manner to merit your continued confidence and good will."

FEED SUPPLIES

(Continued from page 7)

and low tonnages as to reduce cash value of these crops very substantially, as well as those crops to be harvested during later summer and fall months.

According to reports here, the drouth appears to be concentrated in the Ohio Valley. Plentiful rainfall, reported elsewhere in the Midwest during recent weeks, definitely has by-passed this area.

From Jan. 1 through the first week of May only 9.04 in. of rain were recorded in Cincinnati, compared with 15.69 in. during the like period last year.

MACHINERY

(Continued from page 6)

Co. Past presidents serving with the board are Harold J. Alsted, Sprout, Waldron & Co.; Walter C. Ronk, Barnard & Leas Mfg. Co.; Harold M. Soars, Sprout-Waldron, and Mr. Thomas. Executive secretary is Raymond J. Walters.

The association membership has grown, and new members announced at the meeting are Richardson Scale Co., Clifton, N.J.; Ross Machine & Mill Supply Co., Oklahoma City, and Hardy Scale Co., Maywood, Cal.

Plans were made at the meeting to bring the GPMMA products guide up to date. This is a listing of members and their products.

The association also will publish a series of advertisements telling the feed and grain industry of the services and functions of the GPMMA.

New by-laws dealing with association dues were adopted at the day-long meeting, which concluded with the annual banquet.

OFFICERS

(Continued from page 1)

Turner, seven others were elected to the executive committee: E. D. Griffin, Allied Mills, Inc., Chicago; Ward R. Flach, Eastern States Farmers Exchange, West Springfield, Mass.; I. S. Riggs, the Quaker Oats Co., Chicago; J. D. Sykes, Ralston Purina Co., St. Louis, Mo.; Henry C. Tilford, Jr., Dixie Grain Co., Shelbyville, Tenn.; C. W. Tilson, Central Carolina Farmers Exchange, Durham, N.C., and Steele Wright, Texas Farm Products Co., Nacogdoches, Texas.

Terms of all officers and executive committee members are for one year.

Mr. McNeal was graduated from Kansas State University, and taught economics and marketing there before going to Ralston Purina Co. where he became manager of the agricultural forecasting division. During World War II he was with the Office of Price Administration as a deputy administrator.

He joined Pillsbury in 1947 as director of the business analysis department and advanced to vice president in charge of procurement and economic planning. He is now in charge of the feed and soy division, grain merchandising and feed ingredient merchandising. He is a past member of the AFMA Executive Committee and has two years remaining in his term as a member of the association's board of directors.

STEROIDS

(Continued from page 1)

As part of a report on new developments in Pfizer agricultural research, W. M. Reynolds, manager of the firm's agricultural research center, discussed work with a new substance called Compound I—one of several plant steroids tested and found to promote weight gains and feed efficiency in both ruminants and swine.

(Summaries of other reports presented at the Pfizer conference in Chicago will be found on page 6.)

While commercial application of the findings with plant steroids may be some time off because of Food and Drug Administration requirements, Mr. Reynolds said the studies indicate that Compound I may have application in the production of lambs, steers and swine. Additional investigation is needed, he said, before the full assessment of the findings can be made.

Mr. Reynolds said that the new compound, when tested in lamb feeding trials, produced a 23% increase in weight gains, a 21.5% improvement in feed efficiency and a slight improvement in carcass grades and dressing percentages.

With steers the growth promotant produced a 9% improvement in daily gain, a 7% improvement in feed efficiency and a slight improvement in carcass grade and dressing percentage above controls and stilbestrol-fed steers. Levels investigated with fattening steers ranged from 20 to 100 mg. per steer daily. Length of feeding trials ranged from 98 to 139 days.

Baby pigs, the researcher reported, showed a 15% improvement in weight gains and a 2.2% boost in feed efficiency. In the growing-finishing stages, the gain increase was 17% and feed efficiency was improved 9.5%.

"Although stilbestrol exerts strong growth promoting action when fed to steers and lambs or implanted, the dose must be carefully controlled because of the estrogenic action of this compound," said Mr. Reynolds. "Moreover, stilbestrol is not usable as a growth promotant for swine.

"We therefore studied certain steroids of plant origin as growth promotants when given by mouth, seeking a compound with high anabolic activity which does not exert estrogenic effects. Preliminary feeding tests with Compound I indicate that this steroid does act as a growth promotant and that it does not possess estrogenic, androgenic or progestational activity."

Cargill Plans Omaha Molasses Depot

OMAHA, NEB.—A 2.5-million gallon molasses storage and merchandising depot, the only such installation in this area, is planned for "immediate" construction by Cargill, Inc.

The unit, to be capable of distributing some 30,000 tons (5 million gallons) of molasses annually to animal feed industry channels, will be built adjacent to the Omaha Dock Board grain elevator operated by Cargill on the Missouri riverfront. It will be a flat-roofed tank structure 23 ft. high and 140 ft. in diameter, fabricated entirely of steel.

Ace R. Cory, the firm's local manager, said the facility will help make maximum use of river barges by enabling hauls both to and from the port. Special barges, originated by Cargill, will arrive with 178,000 gal. of molasses in the liquid cargo compartments of each, then will depart with 35,000 bu. of grain in separate dry cargo space. The Missouri's present 6-ft. channel limits capacity of the barges, which in deeper water handle 290,000 gal. of molasses or 55,000 bu. of grain, Mr. Cory said.

Mr. Cory said "an immediate start" will be necessary to complete work by late summer and to take a winter-long supply of molasses into store before close of navigation this fall.

FILES CHARTER

DOVER, DEL.—Better Feeds, Inc., filed a charter of incorporation with the corporation department of the secretary of state's office here. Authorized capital stock of the firm is $100,000. Principal office of the corporation is located in Milton, Del.

NUTRITION

(Continued from page 6)

tural groups were elected to the allied industry advisory committee. They include: American Dehydrators Assn.—Joseph Chrisman; American Dry Milk Institute—C. W. Sievert; American Meat Institute Foundation—Dr. O. H. M. Wilder; American Veterinary Medical Assn.—Dr. C. K. Whitehair; Brewers Yeast Council—Dr. Russel A. Rasmussen; Millers National Federation—Ogden P. Confer; National Cottonseed Products Assn.—Dr. Richard A. Phelps; National Fisheries Institute—Ferris Altherr; National Renderers Assn.—Robert J. Fleming; National Soybean Processors Assn.—R. G. Houghtlin, and Distillers Feed Research Council—Dr. L. E. Carpenter.

TOP OF THE HOPPER

(Continued from page 2)

situation and risks that now exist, a number of feed men expressed interest in how or whether they can improve and adapt their operations so that reasonably good return on investment can be realized.

FOOD AND DRUG problems, both the Delaney variety and those stemming from the stepped-up inspection program, were much on the minds of feed men as well as chemical company representatives. Meeting the problems is bringing the entire industry closer together. One example: With drug clearances requiring data on compatability with other products, arrangements to exchange information are probably easier to make these days. More cooperation throughout the industry, and realization that "everyone's in the same boat" will help greatly in reaching the ultimate, bigger solutions.

THE FEED PRODUCTION school, scheduled Sept. 21-23 in Kansas City, will get down to the facts of how to comply with FDA regulations. Answers based on actual surveys and participation by FDA will be featured at the school. The drive of Lloyd Larson to put a top-notch program into shape was evidenced by his ordering the school committee out of bed at a very unlikely hour to get on with the planning during the AFMA.

MANY CONVENTION RETURNEES could well conclude that some of the feed industry's problems result from a situation like that described by Dr. C. K. Whitehair of Michigan State University at the Pfizer conference. He said a professor who was criticized for never changing the questions on his examinations explained that it wasn't necessary: "I just keep changing the answers."

The FEED MARKET

PRICE QUOTATIONS, MARKET TRENDS
OF PRINCIPAL INGREDIENTS

NOTE: Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bulk, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

A AND D FEEDING OIL

Boston: Demand slow; supply ample; 400 D, 3,000 A 21½¢; 300 D, 3,000 A 21¢; 300 D, 2,250 A 19½¢; 300 D, 1,500 A 18¢; 300 D, 750 A 16¢; 75 D, 750 A 15½¢.

ALFALFA MEAL

Boston: Demand slow; supply plentiful; dehydrated, 17% $60; suncured, 13% $48.

Kansas City: Demand improved; trend weak; supply ample; 17% dehydrated alfalfa, 100,000 A on arrival, pellets $41@45 bulk; reground pellets $45@46; 18% dehydrated alfalfa, 125,000 A on arrival, pellets $41@48 bulk, reground pellets $46@49 bulk; 20% dehydrated alfalfa, 150,000 A on arrival, pellets $42@50 bulk, reground pellets $48@56 bulk; suncured alfalfa, demand slow, supply scarce, 13% pellets $36@37 bulk, No. 1 ¼-in. $38.50 sacked.

Portland: Demand fair; trend steady; supply adequate; 20% dehydrated $66.40. Suncured: demand slow; trend steady; supply light; $45.

Cincinnati: Demand fair; trend steady; supply adequate; 17% dehydrated, 100,000 vitamin A $60.

Los Angeles: Demand slackened; trend weaker; supply large; dehydrated meal, 17% protein, 100,000 A $51@52; dehydrated pellet meal, 17% protein, 100,000 A $53@54; suncured meal, 15% protein $48@49; suncured crumbles, 15% protein $50@51.

Ft. Worth: Demand slow; supply sufficient; sacked: dehydrated, 17%, 100,000 A $50@51, rail or truck; 20% protein, 150,000 A $52@53, truck; suncured: 13% ¼-in. grind No. 1 $47, truck; 15% fine ground, dry $49, with 2% fat added $51, rail or truck.

St. Louis: Suncured, 13% fine, sacked $47; dehydrated, 17%, 100,000 A pellets, demand slow, trend lower, supply ample, bulk $48.

New Orleans: Demand fair; trend steady; supply adequate; 17% protein, 100,000 vitamin A $57@60 bulk, $60@63.50 sacked.

Philadelphia: Demand slow; trend unsettled; supply fair; dehydrated, 100,000 A $64.

Omaha: Demand slow; trend easy; supply ample; 17% dehydrated, 100,000 A units, bulk pellets $45; sacked meal $50, Omaha basis.

Memphis: Demand good; trend steady to lower; supply light; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $49.20, bulk.

Buffalo: Demand fair to poor; trend steady; supply adequate; $71, sacked, Boston.

Minneapolis: Holding steady after price decline last week; 17% dehydrated, 100,000 units A, reground pellets $47@51, oiled reground pellets $50@53.

Chicago: Demand slow; trend easier; supply ample; 17% dehydrated, 100,000 units vitamin A $53.

ANIMAL FAT (STABILIZED)

Kansas City: Demand slow; trend steady; supply ample; prime stabilized tallow 5⅝¢ lb.

Ft. Worth: Demand good; supply sufficient; prime tallow, tank cars 5½¢ lb.; drums 5⅝¢ lb., f.o.b. north Texas packing plants with returnable drums.

Boston: Demand slow; supply good; tallow 6¢ lb.; yellow grease 5½¢ lb.

Ogden: Supply ample; $5.75 cwt.

New Orleans: Demand fair; trend easy; supply adequate; 6½¢ lb., tank cars and trucks.

San Francisco: Demand fair; supply ample; bleachable fancy 6⅝¢ lb.; yellow grease 5⅝¢ lb.

Louisville: Demand slow; supply fair; trend easy; bleachable white 6¢ lb.; white tallow 6¼¢ lb.; yellow grease 5⅝¢ lb.; all in tanks.

St. Paul: Demand good; supply ample; market steady; bleachable fancy same as last week at 5⅝¢ lb., f.o.b. producer's plant.

Chicago: Demand less aggressive; trend easier; supply fair; bleachable fancy tallow, tank, truck or carlot $5.87½ cwt., yellow grease $5.50 cwt.

Salisbury, Md.: Demand excellent; supply limited; 6⅜¢ lb.

BARLEY FEED

Milwaukee: Demand fair; trend unchanged; supply ample; feed barley 96¢ bu., bulk; barley feed $37, sacked; ground feed barley $41.50 in cwt.; all basis Chicago.

Los Angeles: Demand slow; trend weaker; supply adequate; standard rolled $2.50 cwt., standard ground $2.30 cwt., both sacked.

Boston: Demand fair; supply ample; $47, sacked.

Ogden: Supply ample; rolled $43@44; whole $38@39.

New Orleans: Demand slow; trend unchanged; supply adequate; $48@50, sacked.

Portland: Demand good; trend steady; supply barely adequate; $44@44.50.

Philadelphia: Demand slow; supply fair; $46.50.

San Francisco: Demand fair; supply ample; rolled $60, ground $59.

Baltimore: Demand fair; trend lower; supply ample; $46.50, sacked.

Chicago: Demand slower; trend easier; supply ample; $36, sacked.

BENTONITE (SODIUM)

Cincinnati: Demand steady; supply adequate; f.o.b. Cincinnati, minimum 20-ton carlots: 80 granular $31.50, less than carlots $40; 200 mesh fine $31, less than carlots $40.

BLOOD FLOUR

Louisville: Demand slow; trend steady; supply ample; $83.50@87.50, sacked.

BLOOD MEAL

Omaha: Demand fair; trend steady; supply ample; 80% $100, sacked.

Ogden: Supply ample; $90, 100-lb. bags, f.o.b. Ogden.

Los Angeles: Demand fair; trend easier; supply ample; $6.50@6.75 a unit of ammonia, sacked.

San Francisco: Demand and supply fair; $6 a unit of ammonia, sacked.

New Orleans: Demand slow; supply ample; trend steady; $82.50@87.50, sacked.

Portland: Demand and supply light; trend steady; $115@120, sacked.

Louisville: Demand dull; trend steady; supply good; $82.50@87.50, sacked.

Chicago: Demand fair; trend firm; supply adequate; 80% protein, in 100 lb. sacks $125.

BONE MEAL (STEAMED)

New Orleans: Demand slow; supply ample; trend easy; $90@100, sacked.

San Francisco: Demand good; supply ample; $75, sacked.

Cincinnati: Demand fair; trend easy; supply adequate; $90, sacked, Cincinnati.

Boston: Demand slow; supply ample; $100.

Portland: Demand fair; trend ample; supply steady; $95@100, sacked.

Los Angeles: Demand fair; trend easier; supply adequate; imported $79.75, 20 ton lots, sacked.

Ft. Worth: Demand fair; supply light; sacked: $100, f.o.b. Ft. Worth, local manufacture.

Louisville: Demand dull; trend weak; supply light; $82.50@87.50, sacked.

Buffalo: Demand good; trend steady; supply ample; $105, sacked.

Chicago: Demand fair; trend steady; supply ample; 100 lb. sacks $97.50.

BREWERS DRIED GRAINS

Philadelphia: Demand and supply fair; trend unsettled; $45.50.

New Orleans: Demand fair; trend easy; supply good; $46@47, sacked.

San Francisco: Demand fair; supply ample; $54, sacked.

Milwaukee: Demand and supply fair; trend lower; $35.50 bulk, $43.50 sacked.

Ft. Worth: Demand slow; supply sufficient; 26% protein $46.

Boston: Demand slow; supply adequate; 26% $44.

St. Louis: Demand slow; trend lower; supply plentiful; $37.

Cincinnati: Demand poor; trend steady; supply adequate; $43.

Los Angeles: Demand slow; trend unchanged; supply adequate; $49.50.

Louisville: Demand slow; supply good; $45, sacked.

Buffalo: Demand fair; trend lower; supply good; $44, bulk, Boston.

Chicago: Demand slow; trend easier; supply ample; 26% protein $31@34.50.

BREWERS DRIED YEAST

San Francisco: Demand fair; supply good; 10¢ lb., sacked.

Omaha: 10½¢ lb.

Los Angeles: Demand slow; trend unchanged; supply adequate; 10¢ lb., 5 ton lots; 11¢ lb., 1 ton lots; 12¢ lb., less than ton lots; all sacked.

Boston: Demand steady; supply ample; 11¢ lb., f.o.b. shipping point.

Portland: Demand light; trend steady; supply ample; 11@12¢ lb.

Cincinnati: Carlots 11¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb., sacked.

Louisville: Demand slow; trend steady; supply ample; 10@10½¢ lb., sacked.

Buffalo: Demand good; trend steady; supply limited; $9.45 cwt.

Pittsburgh: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

New Orleans: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb., all sacked.

New York: Carlots 9½¢ lb.; 10-ton lots 10¢ lb.; 5-ton lots 10½¢ lb.; ton lots 11¢ lb., all sacked, f.o.b. New Jersey.

Chicago: Demand fair; trend steady; supply ample; 9½@10¢ lb., carlots, sacked; 9¾@12¼¢ lb., l.c.l.

Milwaukee: Demand fair; trend steady; supply ample; 10½@12½¢ lb., ton lots, sacked.

St. Louis: Demand fair; trend firm; supply ample; 9½@10¢ lb., carlots, sacked; 10½¢ lb., ton lots 11½¢ lb., less than ton lots.

Denver: Demand slow; trend slow; supply good; $160.

Seattle: Demand slow; trend steady; supply ample; $12 cwt., sacked.

BUTTERMILK (CONDENSED)

Philadelphia: Demand slow; supply fair; $4.25 cwt.

San Francisco: Demand fair; supply good; $5 cwt., drums.

Ogden: Supply good; $4.40 per 100 lb. drum.

Boston: Demand and supply steady; 4¼¢ lb.

Los Angeles: Demand fair; trend unchanged; supply adequate; 5½¢ lb., 100 lb. lots; 4¾¢ lb., 500-lb. lots; both in barrels.

New Orleans: Demand slow; trend unchanged; supply fair; $4.25@4.30 cwt., in drums.

Louisville: Demand dull; trend steady; supply nil; $4.25 cwt., in drums.

Chicago: Demand quiet; trend steady; supply fair; in 500 lb. barrels $3.30@3.75 cwt.

CALCITE CRYSTALS AND FLOUR

(All prices net, sacked, including freight)

New York: Crystals $16.28, flour $10.28.
Buffalo: Crystals $17.11, flour $11.11.
Toledo: Crystals $18.96, flour $12.96.
Boston: Crystals $17.63, flour $11.63.
Lime Crest, N.J.: Crystals $11.50, flour $5.50.

CALCIUM CARBONATE

Cincinnati: Demand fair; trend steady; supply adequate; $7@7.50.

Los Angeles: Demand fair; trend unchanged; supply adequate; flour $10.15, 20 ton cars; meal $11.15, 20 ton cars; both sacked.

Chicago: Demand fair; trend steady; supply ample; fine grind, plain, 100 lb. bags $9.54; bulk, in hopper cars $7.54; bulk, in boxcars $8.04; granular grind $1 premium.

Minneapolis: Fine grind, 50 lb. bags, $12.75; 100 lb. bags, $13; bulk, boxcar, $10.50; bulk, hopper, $10; coarse grind $1 premium, delivered Minneapolis.

CHARCOAL

Los Angeles: Demand slow; trend unchanged; supply adequate; hardwood poultry: $156, less than ton lots; $144.40, ton lots; both sacked.

Boston: Demand seasonally light; supply spotty; $110.

San Francisco: Demand steady; supply ample; $141, sacked.

COCONUT OIL MEAL

Portland: Demand slow; trend steady; supply adequate; $72.

Los Angeles: Demand slow; trend unchanged; supply adequate; copra cake $73@74.

San Francisco: Demand good; supply tight; expeller $70.

COD LIVER OIL (FORTIFIED)

Boston: Demand slow; supply ample; 300 D, 3,000 A 22¢ lb.; 600 D, 2,250 A 20½¢; 300 D, 2,250 A 20¢; 600 D, 1,500 A 19¢; 300 D, 1,500 A 18½¢.

CONDENSED FISH SOLUBLES

Los Angeles: Demand slow; trend easier; supply ample; 2½@2¾¢ lb.

Boston: Demand slow; supply plentiful; 2¢ lb.

New Orleans: Demand light; trend easy; supply fair; $40@45, f.o.b. Gulf.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are bulk basis, sacked basis $5 more)

Minneapolis: Feed $43.60, meal $66.60.
Atlanta: Feed $47, meal $70.
Birmingham: Feed $45.60, meal $68.60.
Boston: Feed $48.50, meal $71.50.
Chicago: Feed $37, meal $60.
Cleveland: Feed $44.90, meal $67.90.
Denver: Feed $47.20, meal $70.20.
Ft. Worth: Feed $45.70, meal $68.70.
Indianapolis: Feed $42.20, meal $65.20.
Kansas City: Feed $37, meal $60.
Louisville: Feed $43.60, meal $66.60.
New Orleans: Feed $46.90, meal $69.90.
New York: Feed $48.10, meal $71.10.
Norfolk: Feed $47.50, meal $70.50.

CORN OIL MEAL

Cincinnati: Demand fair; trend steady; supply adequate; $42.

Louisville: Demand dull; trend weak; supply light; $51.45.

COTTONSEED OIL MEAL

New Orleans: Demand slow; supply ample: $65@65.50 bulk, $67.50@68 sacked.

Memphis: Demand poor; trend weak; supply ample; prime 41% protein, old process $51; new process, 41% solvent $50.

Kansas City: Demand poor; trend steady; supply ample; 41% old process $52@52.50; solvent process $50@50.50, Memphis.

Portland: Demand fair; trend steady; supply light; $72.

Cincinnati: Demand poor; trend steady; supply adequate; $59.60.

Los Angeles: Demand moderate; trend unchanged; supply adequate; $68.

Boston: Demand quiet; supply plentiful: $70.50.

Ogden: Supply good; 41% $70@72.

St. Louis: Demand slow; trend easy; supply ample; solvent $54.50.

Ft. Worth: Demand slow; supply sufficient; 41% old process $63, f.o.b. mills Ft. Worth; carlots, solvent, 2% fat added $57@58, delivered Ft. Worth; pellets $2 additional; hulls $26.

Philadelphia: Demand and supply fair; $69.

Wichita: Demand fair; supply ample; 41% old process $69, sacked.

Omaha: Demand slow; trend easy; supply ample; 41% solvent $58.70, delivered Omaha.

San Francisco: Demand good; supply tight; 41% $68.50; 44% $70.

Louisville: Demand slow; trend easy; supply fair; new or old process $61.50, sacked.

Buffalo: Demand poor; trend steady to lower; supply fair; $73, sacked, Boston.

Chicago: Demand and supply fair; trend easier; hydraulic $61.50, Memphis basis.

D ACTIVATED ANIMAL STEROL (POWDERED)

Cincinnati: Demand fair; trend steady; supply ample; 1,500 ICU 11@12¢ lb.; 3,000 ICU 10¢ lb., warehouse.

DEFLUORINATED PHOSPHATE

Butte, Mont.: Minimum phosphorus 18%, minimum calcium 32%, maximum calcium 36%, maximum fluorine .18%, $81 (or $4.50 per unit of P), f.o.b. Butte, 100 lb. multiwall bags; bulk $78; truck loads of less than 10 tons $10 more, bagged or bulk.

Houston: Minimum phosphorus 19%, minimum calcium 32%, maximum calcium 35%, maximum fluorine .19% $74.35 net ton, f.o.b. Houston, 100 lb. multiwall bags; $71.35, bulk.

Coronet, Fla.: Minimum phosphorus 18%, minimum calcium 31%, maximum calcium 34%, maximum fluorine .18%; guaranteed uniform analysis; carload $66.25, sacked, 100-lb. multiwall bags, bulk $63.25; truck load $67, sacked, in 100-lb. multiwall bags, bulk $64, f.o.b. Coronet, Fla.

Tupelo, Miss.: Minimum phosphorus 14%, minimum calcium 28%, maximum fluorine .14% $67.07, f.o.b. Tupelo in 100-lb. multiwall bags, $54.07 bulk.

Wales, Tenn.: Minimum phosphorus 18%, minimum calcium 32%, maximum 36%, maximum fluorine .18% $71.40 (or $3.99 per unit of P), f.o.b. Wales in 100 lb. multiwall bags, $3 less in bulk.

Cincinnati: 18% phosphorus $81.02; 14% phosphorus $71.03; f.o.b. Cincinnati.

DICALCIUM PHOSPHATE

Trenton, Mich.: 18¼% P $83, bulk, boxcar/hopper car; $86, bagged, in carloads or truck loads; $96, bagged, in less than carload lots; 21% P, $94.65, bulk, boxcar/hopper car; $97.64, bagged, in carloads or truck loads; $107.65, bagged, less than carload; all prices f.o.b. Trenton, freight equalized with nearest producing point.

Chicago: Bulk 18.5% phosphorus, carlots or trucks $83; 20,000 lb. or more $86 net ton in 100 lb. papers; less than 20,000 lb. $96, basis Chicago Heights, Ill., or Nashville, Tenn.; 21% phosphorus, carlots or trucks, bulk $94.65; 20,000 lb. or more, per net ton in 100 lb. papers, $97.65 and less than 20,000 lb., $107.65, basis Chicago Heights, Ill., or Nashville, Tenn.

Bonnie, Fla.: Minimum phosphorus 18½%, granular, $86 (or $4.65 unit of P), freight equalized from nearest producing point, carload basis; bulk carloads $3 less; in truck loads of less than 10 tons, $10 more. Western slope prices, for delivery at established railroad stations and by truck at regular feed mixing plants: California, Arizona, Nevada and Utah, $99.90; Washington, Oregon, Montana and Idaho, $107.15; bulk carloads $3 less; truck loads less than 10 tons, $10 more.

Columbia, Tenn.: Minimum phosphorus 18½%, minimum calcium 24% $86, f.o.b. Columbia, in 100 lb. multiwall bags; freight equalized with nearest producing point, carload basis; bulk $3 ton less.

Texas City, Texas: Minimum phosphorus 18.5%, minimum calcium 20%, maximum calcium 23%, maximum fluorine .13%; carload and truck load $80.50, sacked, in 100 lb. multiwall bags, bulk $77.50, f.o.b. Texas City.

Portland: Demand fair; trend steady; supply ample; $90@102.50, sacked.

Cincinnati: 18½% phosphorus $92.15, f.o.b. Cincinnati.

DISTILLERS DRIED GRAINS

Cincinnati: Demand fair; trend steady; supply adequate; by truck $52.50.

Boston: Demand good; supply spotty; light $56, dark $57.

San Francisco: Demand fair; supply ample; solubles $79, sacked.

Philadelphia: Demand slow; supply fair; $55.50.

Louisville: Demand very dull; trend very weak; supply heavy; just a bad market; sharp breaks, and holders offering at under distillers prices, which are also weak. Normal offerings here at $3 under last week, light bourbon grains $47 sacked, dark $49, solubles $73; reported that Memphis holders offering light or dark at $42, sacked, delivered at Louisville, apparently overloaded and wanting to unload; with good grass the feed markets are generally weak. What with soybean meal down $4; it is really a fast track.

Buffalo: Demand fair; trend steady to lower; supply good; $55, bulk, Boston.

DRIED BEET PULP

Boston: Demand active; supply tight; resales $69.

Ogden: Supply ample; $41@46.

Milwaukee: Demand good; trend strong; supply limited; plain $61, molasses $62.50, both Chicago.

Portland: Demand good; supply tight; trend steady; $51.60, sacked.

Los Angeles: Demand slow; trend weaker; supply plentiful; $43.30@43.50, bulk, rail cars.

New Orleans: Demand fair; trend steady; supply adequate; $54.50@55, papers.

San Francisco: Demand good; supply fair; $42.80.

Buffalo: Demand fair; trend steady to higher; supply poor; $70, sacked, Boston.

DRIED BUTTERMILK

San Francisco: Demand fair; supply ample; 12½¢ lb., sacked.

Ogden: Supply normal; $17.25 cwt.

Boston: Demand good; supply short; 14¢ lb., nominal.

New Orleans: Demand fair; trend steady; supply ample; $13@14 cwt., sacked.

Los Angeles: Demand fair; trend unchanged; supply adequate; 13¾¢ lb., sacked.

Milwaukee: Demand fair; trend limited; supply limited; 13¢ lb.

Louisville: Demand dull; trend easy; supply light; 13½@13¾¢ lb., sacked.

Buffalo: Demand good; trend firmer; supply limited; $12.85 cwt.

Chicago: Demand slow; trend easier; supply fair; medium acid $11.70@12 cwt., sweet cream $11.70@12 cwt., both sacked.

DRIED CITRUS PULP

Boston: Demand slow; supply light; $54.50 sacked.

Los Angeles: Demand slow; supply am-

ple; trend unchanged; orange pulp $38; lemon pulp $36.

New Orleans: Demand fair; trend easy; supply ample; $32.50@35, f.o.b. Florida.

San Francisco: Demand and supply fair; $40, sacked.

Buffalo: Demand poor; trend steady; supply fair; $37.50, sacked, f.o.b. Florida points.

DRIED SKIM MILK

Portland: Demand fair; trend steady; supply light; 13¢ lb.

Milwaukee: Demand fair; trend limited; supply limited; $14.50 cwt.

Boston: Demand good; supply scarce; animal feed 12¼¢ lb.

Cincinnati: Demand fair; trend steady; supply adequate; 12@13¢ lb., sacked.

Ogden: Supply ample; $15.15 cwt. drum.

Los Angeles: Demand fair; trend unchanged; supply adequate; 15¢ lb., less than ton lots; 14¾¢ lb., ton lots; both sacked.

Philadelphia: Demand slow; supply fair; $13 cwt.

New Orleans: Demand slow; trend unchanged; supply ample; $13.50@14, sacked.

San Francisco: Demand and supply fair; 14½¢ lb., sacked.

Louisville: Demand slow; trend easy; supply light; 12½@13¢ lb., sacked.

Buffalo: Demand fair; trend steady; supply just fair; spray $13.85 cwt.

Minneapolis: Generally steady to slightly higher; $12.75@13 cwt.

Chicago: Demand slow; trend steady; supply fair; $11.75@12.25 cwt., sacked.

DRIED WHEY

Boston: Demand and supply steady; 5¼¢ lb., f.o.b.

Ft. Worth: Demand fair; supply adequate; carlots, standard $5.75, sacked, delivered Ft. Worth; ton lots $6, f.o.b. warehouse, Ft. Worth.

Portland: Demand fair; trend unchanged; supply good; $6.10 cwt., sacked.

Los Angeles: Demand fair; trend easier; supply adequate; $5.68 cwt., carloads; $5.75 cwt., l.c.l.; both sacked.

Ogden: Supply ample; $7 cwt., sacked.

San Francisco: Demand steady; supply good; $5.75 cwt., sacked.

Philadelphia: Demand slow; supply fair; $6.25 cwt.

Cincinnati: Demand fair; trend steady; supply adequate; $6.75 cwt., sacked.

New Orleans: Demand fair; trend easy; supply ample; $6@6.50 cwt.

Louisville: Demand slow; trend easy; supply light; 6¢ lb., sacked.

Minneapolis: Market steady; demand good; supply ample; $5.40@5.45 cwt.

Kansas City: Demand fair; trend steady; supply adequate; regular or partially delactosed $5.75 cwt., sacked.

Chicago: Demand quiet; trend firm; supply fair; $5.75@6 cwt., sacked.

FEATHER MEAL (HYDROLYZED)

Los Angeles: Demand slow; trend unchanged; supply ample; $1 a unit of protein, sacked.

Ft. Worth: Demand spotty; supply sufficient; 85-87% protein $75, sacked, f.o.b. trucks north Texas plants.

Boston: Demand fair; supply plentiful; $71, sacked, f.o.b. shipping points.

Salisbury, Md.: Demand spotty; excess of supply for demand; $75, f.o.b.

FISH MEAL

Boston: Demand slow; supply plentiful; $103.

Ft. Worth: Demand fair; supply sufficient; sacked, 65% protein Peruvian $105; 60% protein menhaden $107, delivered Ft. Worth.

Cincinnati: Demand fair; trend steady; supply adequate; $132.

Ogden: Supply average; $1.70 a unit, f.o.b. Coast; 65% $115@117.

Milwaukee: Demand limited; trend weaker; supply good; 60% $125, sacked, Chicago.

Portland: Demand fair; trend weak; supply ample; $1.70 a protein unit, sacked.

Los Angeles: Demand slow; trend unchanged; supply small; local production, 60% protein $1.50@1.55 a unit, sacked.

Omaha: Demand fair; trend improving; supply plentiful; 60% menhaden $115, f.o.b.

San Francisco: Demand slow; supply ample; $1.60 a unit of protein, sacked.

New Orleans: Demand dull; trend easy; supply ample; menhaden, 60% $100@102, sacked, f.o.b. Gulf; scrap $96@98, sacked, f.o.b. Gulf.

Louisville: Demand dull; trend very weak; supply light; consumption low; $130@135, sacked.

Buffalo: Demand just fair; trend steady; supply ample; 60% protein menhaden $120 bulk, $125 sacked.

Minneapolis: Supply adequate; demand slow but steady; Gulf menhaden $117, sacked, truck lots, Minneapolis; 70% herring $1.65 a unit of protein, f.o.b. West Coast; West Coast 60% blended down from $126 @128 last week to $125, sacked, delivered Minneapolis.

Chicago: Demand quiet; trend easier; supply liberal; menhaden, East Coast $100, Gulf $100; menhaden scrap, East Coast $96, Gulf $96; Canadian herring meal, a unit of protein $1.65.

HAY

Philadelphia: Demand slow; supply light; $24@25.

Los Angeles: Good interest with ample supplies; U.S. No. 1 $36@37; U.S. No. 2 leafy $34@36; U.S. No. 2 green $35@36; U.S. No. 2 $32@33.

Ogden: Supply ample; $25 in tre barn.

Boston: Demand seasonally light; supply adequate; No. 2 timothy $40@42.

Portland: Demand fair to slow; trend unsettled and adjusting to a new crop basis; supply adequate; old crop $35, Portland area, baled; new crop $32, baled, delivered Portland.

Cincinnati: Demand poor; trend steady; supply adequate; No. 1 timothy $30; No. 1 red clover $38; alfalfa, first cutting $42, second cutting $52; alfalfa and clover mixed $39; wheat or oat straw $32, f.o.b. Wisconsin.

Ft. Worth: Demand slow for alfalfa, practically nil for others; supply sufficient; carlots, baled, No. 1 alfalfa $44@46, No. 2 $42@44; No. 3 prairie, nominal $30@32; No. 2 Johnson grass, nominal $28@30, delivered Texas common points.

Wichita: Demand low; supply sufficient; prairie $30@32, alfalfa $32@34, baled.

Louisville: Demand slow; trend weak; supply heavy; all varieties, No. 1 hay $30@32, No. 2 hay $28@30; straw $20.

HOMINY FEED

Buffalo: Demand fair; trend steady to lower; supply fair to good; $49.50, bulk, Boston.

New Orleans: Demand fair; trend easy; supply ample; $50@51, sacked.

St. Louis: Demand slow; trend steady; supply ample; yellow $39.50.

Memphis: Demand poor; trend steady; supply ample; white $42.70, yellow $42.70.

Kansas City: Demand slow; trend easy; supply adequate; white or yellow $33.50 @34.

Boston: Demand spotty; supply plentiful; $49.

Milwaukee: Demand and trend fair; supply fair; $45 sacked, $40.50 bulk, both Chicago.

Cincinnati: Demand fair; trend lower; supply lower; $43.

Louisville: Demand dull; trend steady; supply light; $48.50, sacked.

Chicago: Demand slow; trend easier; supply ample; $40.50.

LINSEED OIL MEAL

Minneapolis: Trading slow; $54@55 nearby; $55@55.50 for late May and June.

Kansas City: Demand slow; trend steady; supply adequate; solvent process $54@54.50; old process $54@64.50, Minneapolis.

Los Angeles: Demand fair; trend unchanged; supply adequate; local production, 31% protein $78.

Boston: Demand and supply light; $75.

Portland: Demand slow; supply light; trend unchanged; $52.25.

Ft. Worth: Demand slow; supply sufficient; 34% protein, solvent $71.50, rail.

Wichita: Demand fair; supply sufficient; 34% $78, sacked.

Omaha: Demand slow; trend easy; supply ample; 34% solvent $59.80, bulk; 32% old process $71.30, Omaha basis.

New Orleans: Demand slow; trend easy; supply ample; $74.50 bulk, $79@79.50 sacked.

Milwaukee: Demand and supply fair; trend lower; expeller $76, solvent $65, both Chicago basis.

Philadelphia: Demand slow; supply fair; 34% $77.

Cincinnati: Demand poor; trend steady; supply adequate; new process $54.50; old process $64.50; Minneapolis.

San Francisco: Demand fair; supply ample; $73.

Louisville: Demand slow; trend easy; supply normal; old process $53.50, new process $73, both sacked.

Chicago: Demand and supply fair; trend easier; Minneapolis basis: solvent $54.50, expeller $65.

LIVER & GLANDULAR MEAL

Omaha: Demand fair; trend steady; supply ample; 65% $150, sacked.

MALT SPROUTS

Milwaukee: Demand good; trend firm; supply limited; $31.50 bulk; $37.50 odd weights; $40 even weights.

Cincinnati: Demand fair; trend steady; supply adequate; No. 1 $35.

Boston: Demand and supply light; $48, sacked, nominal.

New Orleans: Demand fair; trend easy; supply ample; $43.50@45, sacked.

MEAT AND BONE MEAL

St. Paul: Demand remains slow; supply adequate; price down from $75@79 last week to $73@78.

Buffalo: Demand just fair; trend easier; supply ample; 50% meat scraps $75 bulk, $80 sacked.

Ogden: Supply ample; $75 ton, 50% protein, in 100 lb. bags.

St. Louis: Demand slow; trend weak; supply ample; $72.

Kansas City: Demand slow; trend steady; supply ample; 50% $70.

Ft. Worth: Demand fair; supply sufficient; meat and bone, 50% $75, f.o.b. Ft. Worth.

Boston: Demand slow; supply plentiful; $1.20 a protein unit; converted 50% $72.50.

Los Angeles: Demand and trend steady; supply adequate; 50% protein $1.65 a unit.

Portland: Demand good; trend steady; supply adequate; $82.

Cincinnati: Demand and supply fair; trend easy; 50% meat and bone scraps $71, Cincinnati.

New Orleans: Demand slow; trend easy; supply ample; $85@90, sacked.

Wichita: Demand good; supply sufficient; 50% $87.50, sacked, f.o.b. plant.

Omaha: Demand fair; trend improving; supply ample; $70, bulk.

Louisville: Demand slow; trend steady; supply good; $80@85, sacked.

Chicago: Demand quiet; trend easier; supply fair; 50% protein, in 100 lb. sacks $80.

MILLFEED

Minneapolis: Demand slacking off; supply ample; middlings up from $35 last week to $35.50@36, sacked; red dog steady at $42, sacked; bran off to $36@36.50.

Kansas City: Demand better; trend strong; supply nearby, tight; sacked, bran $31@31.50, bulk $27@@27.50; sacked, shorts $35.50@36, bulk $31@31.50; bulk middlings $28@28.50.

Wichita: Demand fair for bran, good for shorts; supply sufficient for bran, insufficient for shorts; basis Kansas City: bran $33.75@34.25, shorts $35.75@36.25, sacked; bran up 75¢ and shorts $2.75, compared with the preceding week.

Ft. Worth: Demand fair; supply sufficient bran, bulk $37, burlaps $42.50; gray shorts, bulk $40.50, burlaps $45; bulk middlings $37.50, delivered Texas common points; $1.50 lower on bran, unchanged to 50¢ higher on shorts, $1.50 lower on middlings compared with previous week.

Chicago: Bran and middlings both down about 50¢; red dog unchanged; flour mill running time relatively low, but demand fell off in proportion; nearby shipment about only thing wanted; bran $33, middlings $34, red dog $41.50.

St. Louis: Sacked, bran $36.50, shorts $40.50; bulk bran $32, middlings $33.

Omaha: Demand and trend steady; supply ample; sacked bran $35.50, sacked gray shorts $36, bulk standard midds. $38.50, all Omaha basis.

Cincinnati: Demand poor; trend steady; supply adequate; bran $40, middlings $40.40.

Boston: Demand quiet; supply spotty; bran $45, middlings $46.

Buffalo: Flurry of buying in middlings May 10 on increased consumption, but millfeed sales quiet otherwise. Bran worked sideways. Bulk bran is not a hard sale, but customers few and far between. Sacked bran went very well against its availability, differential widened out to $3 from $7 on good country trade demand. Flour mill running time off a little. Bulk bran ended $2 lower, sacked $1. Middlings bottomed out and moved up, with bulk unchanged and sacked $1 higher. Red dog steady. Quotations May 11: bulk bran $32.50 @33, sacked $41@41.50; bulk middlings $36@37, sacked $46@45; bulk red dog $43 @43.50, sacked $47.50@48.

Philadelphia: Demand and supply fair; trend unsettled; bran $44, middlings $44.50, red dog $49.50.

New Orleans: Demand good; trend easy; supply ample; bran, sacked $44.50@45.25, bulk $38.50@39; shorts, sacked $44.50@ 45.25, bulk $39.50@40.25; bulk middlings $39@39.75.

Memphis: Demand fair to poor; trend steady to lower; supply ample; wheat bran $34.70, gray shorts $37.20, middlings $33.70.

Louisville: Demand slow; trend fairly steady; supply good; bran $45.10, mixed feed $46.60, shorts $48.60, all sacked.

Ogden: Supply ample; to Utah and Idaho: red bran and mill run $38, middlings $43; to Denver: red bran and mill run $46, middlings $50; to California: red bran and mill run $45.50, middlings $50.50, f.o.b. San Francisco and Los Angeles.

Portland: Demand light; trend barely unchanged; supply tight; $40.50@41.

San Francisco: Demand slow; supply ample; millfeed $49, red bran $54.

Los Angeles: Standard mill run $45@46.50, slow demand, weaker trend, increased supplies; red bran $46.50@47.50, slow demand, weaker trend, adequate supplies.

MINERAL FEED

Sioux City: 50 lb. mineral blocks 8.2% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $4 each.

Portland: Demand steady; supply ample; trend unchanged; $44@45, sacked.

Ogden: Supply good; $113 ton in 50 lb. blocks; $103, granular, 50 lb. bags.

Ft. Worth: Demand fair; supply adequate; all-purpose granules $90, block $97; mineral phosphorus 6% granules $106, block $113; cattle-sheep mineral 7% phosphorus granules $100, block $107; hog mineral phosphorus 3½% granules $87, phosphorus 2% $77 (all in 50-lb. paper bags).

Wichita: Demand heavy; supply adequate; all-purpose with iodine, 50 lb. blocks $97.50, 100 lb. bags $92.50, f.o.b. plant.

San Francisco: Demand steady; supply good; all-purpose with iodine $70, sacked.

MOLASSES

Buffalo: Demand fair; trend steady; supply good; 14¢ gal., f.o.b. Albany.

Minneapolis: Demand slow; supply ample; price down 50¢ to $27 tank truck, delivered.

Kansas City: Demand fair; trend steady; supply tighter; blackstrap 8¼@8½¢ gal., f.o.b. tank car, New Orleans.

Milwaukee: Demand fair; supply ample; trend unchanged; blackstrap 8½¢ gal., f.o.b. New Orleans.

Cincinnati: Demand fair; trend steady; supply adequate; 8½¢ gal., New Orleans.

Ft. Worth: Demand slow; supply sufficient; blackstrap 9½¢ gal., f.d.b. Houston; delivered Ft. Worth, truck $22.95, seller's market price on date of shipment.

Boston: Demand steady; supply ample; 14¢ gal. in tank cars.

St. Louis: Demand slow; trend steady; supply ample; 8½¢ gal., tank car, New Orleans.

New Orleans: Demand fair; trend steady; supply good; 8¼@9¢ gal., tank cars and trucks; 600-lb. customers' drums $6.90.

Memphis: Demand poor to fair; trend steady to weak; supply ample; blackstrap 8¼¢ gal., tank car, f.o.b. New Orleans, and $20.23 ton, delivered, Memphis, truck.

Los Angeles: Demand excellent; trend steady; supply ample; $19.50, f.o.b. tank cars; $19.75, f.o.b. tank trucks.

San Francisco: Demand and supply good; $19.75 ton, f.o.b. cars, Richmond, Cal.

Louisville: Demand slow; trend steady; supply good; 8½¢ gal., tank car lots, f.o.b. Gulf ports.

OAT PRODUCTS

Minneapolis: No change from last week; sacked—feeding rolled $31, feeding oatmeal $68, pulverized $47, crimped $42.50, reground oat feed $27.

Boston: Demand spotty; supply irregular; white pulverized, sacked $58.50; reground oat feed $38, nominal.

Ft. Worth: Demand slow; supply sufficient; oat millfeed $48.70, reground $34.70, sacked, new jutes.

Memphis: Demand poor; trend lower; supply ample; 2½% protein, reground oat feed $32.25.

Portland: Demand fair; trend steady; supply tight; $58.50.

Los Angeles: Demand slow; trend unchanged; supply limited; local production, pulverized $69, sacked.

Cincinnati: Demand fair; trend steady; supply adequate; pulverized white oats $49 @54.

Philadelphia: Pulverized white, demand slow, supply fair, $52; domestic, demand slow, supply light, $32.80; Canadian oat feed, demand slow, supply light, $36.50, sacked.

Louisville: Demand slow; trend steady; supply ample; reground $39.30; rolled oats $84.80; feeding oatmeal $80.30; crimped white oats $67.80; pulverized white oats $53.80; all sacked.

Chicago: Demand fair; trend steady to strong; supply moderate; reground oat feed $23; No. 1 fine ground feeding oatmeal $74.50; feeding rolled oats $79.50.

OYSTER SHELL

San Francisco: Demand fair; supply ample; local $15, eastern $26, sacked.

Cincinnati: Demand fair; trend steady; supply adequate; 80 lb. bags $23.85; 50 lb. bags $24.10, 25 lb. bags $26.35.

Boston: Demand and supply steady; in paper $26.05.

Portland: Demand fair; trend steady; supply ample; western $27, eastern $35, shell flour $23, granite grits $23.50, all sacked.

Los Angeles: Demand fair; trend unchanged; supply ample; $15.40.

New Orleans: Demand and supply good; trend steady; $25@26, papers.

Louisville: Demand good; trend steady; supply normal; in paper bags, 25-lb. $26.90, 50-lb. $23.70, 80-lb. $23.45.

PEANUT OIL MEAL

Milwaukee: Demand and supply fair; trend unchanged; 36% $46 sacked, $41 bulk, both Chicago.

PEAT MOSS

Portland: Demand improved; supply adequate; trend steady; $3@3.15, 5.6 cu. ft. bale.

Cincinnati: Demand good; trend steady; supply good; truck loads $3.45, baled, Cincinnati.

Los Angeles: Demand good; trend steady; supply ample; Canadian, 5.6 cu. ft. bales $3.65.

Boston: Demand and supply steady; $3.15 bale in carlots.

Philadelphia: Demand and supply fair; $2.99 bale, f.o.b. pier.

San Francisco: Demand and supply fair; $3.65, bale.

POTASSIUM IODIDE, U.S.P.

Cincinnati: Demand good; trend steady; 99% KI in calcium stearate or carbonate mixtures: 250 lb. drums $1.35, 200 lb. in 100 lb. drums $1.36; 100 lb. drums $1.38; 25 lb. drums $1.41, f.o.b. Cincinnati.

Chittenango, N.Y.: Demand good; trend firm; supply ample; standard blends, 99% K.I., 10% stearate or carbonate mixture: 100 lb. drums $1.25½ lb.; 300 lb. and up $1.29½ lb., all delivered.

POULTRY BY-PRODUCTS

Los Angeles: Demand good; trend firm; supply tight; $1.45 a unit of protein, sacked.

Boston: Demand fair; supply tight; $80, f.o.b. shipping points.

Ft. Worth: Demand fair; supply moderate; 55% protein $70.50, sacked, f.o.b. north Texas plants.

Salisbury, Md.: Demand good; ample supply; $80, f.o.b.

RIBOFLAVIN

Cincinnati: Trend steady; feed grade (in feed supplements) 4¢ gram, in less than ton lots in 3.36 to 16 gm./lb. mixtures, 3¢ in ton lots or more; freight prepaid or paid to destination.

RICE BY-PRODUCTS

Los Angeles: Demand fair; trend unchanged; supply adequate; California production, high fat content, bran $61@62, sacked.

Ft. Worth: Demand fair; supply limited; rice bran $32@33, f.o.b. south Texas rice mills; hulls $3.50, sacked, f.o.b. mills.

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San Francisco: Demand good; supply ample; bran $45, polished $49, both sacked.

SCREENINGS

Cincinnati: Demand fair; trend steady; supply adequate; unground grain screenings $25.50.

Ft. Worth: Demand slow; supply sufficient; ground mixed grain $27@28, nominal.

Buffalo: Demand fair; trend lower; supply adequate; ground, sacked $35, New York, lake and rail; unground, bulk $28, New York.

Minneapolis: Canadian supply loosening up as shipping opens; new Canadian at $18.50 May, $17.50 June; domestic supplies tight, demand good, prices at high end of ranges; lights at $13@23, mediums $24@33, heavies $34@43; flax screenings down again to $38.

Chicago: Demand quiet; trend easier to steady; supply fair; ground grain screenings $36.50; Canadian $26.90.

SOYBEAN OIL MEAL

Boston: Demand slow; supply plentiful; 44% $51, 50% $55, both f.o.b. Decatur.

Minneapolis: Demand good; supplies heavy; 44% down $1 from last week to $48.

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Ft. Worth: Demand slow; supply sufficient; 44% $61.60 May, $65.10 June, $65.60 July-August; 50% $68.50 May, $72.60 June, $73.10 July-August.

Kansas City: Demand poor; trend steady; supply ample; solvent process $50@51, Decatur.

Portland: Demand fairly good; trend easy; supply adequate; $75.40.

Cincinnati: Demand fair; trend steady to easier; supply adequate; $54, Decatur.

Omaha: Demand slow; trend easy; supply ample; 44% $56.60, delivered Omaha.

Philadelphia: Demand and supply fair; $51, bulk, Decatur.

Wichita: Demand poor; supply ample; 44% $45, 50% $71, sacked; 44% $42, 50% $68, bulk, f.o.b. Wichita.

St. Louis: Demand slow; trend lower; supply ample; 44% $57.

New Orleans: Demand slow; trend easy; supply ample; $67@68, sacked.

Memphis: Demand poor; trend weak; supply ample; prime 44% solvent $55.50, f.o.b.

Los Angeles: Demand slow; trend slightly firmer; supply adequate; $74.90@75.40.

Ogden: Supply good; 41% protein $78@79; 50% protein $83@84.

Milwaukee: Demand and supply fair; trend lower; $53, Decatur.

San Francisco: Demand fair; supply ample; $75.90.

Louisville: Demand very dull; trend very weak; supply good; $63.70, down $4.

Chicago: In the face of reports of further shutdowns by processors as well as reductions in running time at others, soybean oil meal broke again this week. Buyers remain cagey, only taking what they need for immediate future. Many looking for break in beans ahead of maturity date on loans as of May 31 and figure this will make it possible to buy meal on better basis during coming 30 days. Quotations: Decatur basis—44% protein, unrestricted billing $53.50, eastern trunk line $50; 50% protein, unrestricted billing $59, and eastern trunk line $54.

TANKAGE

St. Paul: Demand slow; price off from $74@75 last week to $71@75.

Louisville: Demand slow; trend steady; supply good; $30@35.

Cincinnati: Demand and supply fair; trend steady; 60% digester $74, Cincinnati.

New Orleans: Demand dull; trend steady; supply good; tankage, 60% $87@89.50 bulk, $92@94.50 sacked.

Wichita: Demand good; supply sufficient; 60% $87.50, sacked, f.o.b. plant.

Kansas City: Demand slow; trend steady; supply ample; 60% digester $67.50@70.

Omaha: Demand fair; trend improving; supply ample; $73, bulk.

Ft. Worth: Demand slow; supply sufficient; 60% digester $81, sacked, Ft. Worth.

St. Louis: Demand slow; trend weak; supply ample; $72.

Chicago: Demand quiet; trend lower; supply fair; 60% protein in 100 lb. sacks $80.

VEGETABLE & ANIMAL FAT (HYDROLYZED)

Ft. Worth: Demand good; supply limited; 5¼¢ lb., f.o.b. north Texas area.

VITAMIN B FEED SUPPLEMENT

Cincinnati: Demand good; trend steady; any quantity in 100 lb. drums $1.50; in 25 lb. drums $1.55, freight allowed to destination.

WHEAT GERM MEAL

New Orleans: Demand fair; trend easy; supply ample; $64@66, cottons.

Minneapolis: Demand fair; supply tight; price steady at $55, jutes.

Buffalo: Demand fair to poor; trend steady to lower; supply fair; commercial grade $60, sacked, f.o.b. Buffalo.

ADDITIVE LAW

(Continued from page 1)

change, Mr. Kneeland said: "We also believe that the Delaney clause should be modified to provide that additives used in animal feed which leave no residue either in the animal after slaughter or any food product obtained from the living animal be exempt from the provisions of the clause. If it can be demonstrated that a chemical or drug that induces cancer in animals when added to their diet can be used in such a manner that it does not harm the animal and so as to leave no residue in food consumed by man, the department should be in a position to approve its use."

The latter proposal also was referred to by I. S. Riggs, Quaker Oats Co., retiring chairman of the AFMA. "FDA should be supported in its proposal to secure this needed change in the law," he said. "If you have not already done so, I wish you would express your viewpoint to your congressman."

Mr. Riggs pointed out that there is no conflict between the concept of a safe and healthful food supply and the concept of using every scientific aid to produce food more efficiently. "I expect this problem to be solved," he said. "It won't be easy, but the more it is talked about, the more thought given to it, the sooner an enlightened law will be secured."

Mr. Riggs earlier in his talk noted that "we live in a world which must be explained in chemical terms. Many of our basic foods contain substances which are poisonous, explosive or otherwise dangerous in large amounts or under some conditions.

"More importantly," he said, "today in a society which is confused between food fallacies and food facts, we are trying to operate this feed industry in an atmosphere governed not by scientific reason but by legislative decree."

Supports Delaney Concept

While some modifications in the law are being proposed by HEW officials, Mr. Kneeland made it plain that his department has no hesitancy about advocating the inclusion of an anticancer clause in the proposed Color Additives Bill and its retention in the Food Additives Amendment. His address included a lengthy quotation from a statement by Secretary Flemming which described the department's stand in this matter and why it feels it must take this position.

Here is a portion of Mr. Flemming's statement.

"A characteristic of the hazards of the external environment is that large numbers of people may be affected, and particularly by the total or cumulative effects of external forces (such as chemicals or radioactivity) over long periods of time.

"When the question arises as to whether limitations shall be placed on the fruits of technology for the protection of the people, the concept of government acting to protect the public interest meets one of its sternest tests.

"This is a simple, straightforward matter when there is incontrovertible scientific evidence that a control measure is necessary and warranted.

"It is when this situation does not obtain—when there is not incontrovertible proof that a health hazard does exist but ample reason to think that it may—that the issues are joined.

"Here, it seems to me, are the guidelines for action that, under such circumstances, government must follow:

"First, it must make an objective appraisal of the issue. It must seek out all the facts, assess them, and determine where the weight of scientific evidence lies.

"Second, on the basis of the evidence, it must pursue a course of action which best reflects the public interest.

"Third, it must maintain and demonstrate its respect for the point of view of others. In choosing its course of action, the government has made a judgment. It must stand ready to modify that judgment if new evidence is obtained that warrants change.

"Fourth, in all these actions, once a decision is reached, it should be made public and the reasons for the decision explained.

"But there is one thing that a responsible government cannot do. It cannot fail to place at the top of its list of priorities the health of all of the people even though by so doing it may be or may appear to be acting against the economic interests of a segment of our society."

Mr. Kneeland took issue with the statement frequently made by industry scientists and others that the Delaney clause prohibits the exercise of scientific procedures and judgment in evaluating the safety of food additives.

"This is not true," he said. "The conclusion that an additive 'is found to produce cancer when ingested by man or animal' is a scientific one. The conclusion is to be reached by competent scientists using widely accepted scientific testing methods and critical judgment. It is true that, once this scientific conclusion has been reached, the law provides us with no discretion to consider its use at any level as an additive to food."

Also, he declared that the provisions of the Food Additives Amendment should not throttle research but rather should encourage it. "True, the amendment may make necessary a reorientation of research programs to develop useful additives that can be used safely in our food supply," he said. "Is it, however, logical to conclude that research on food additives will only develop substances classified as ones which will induce cancer in man or animals when ingested?"

The FDA official said that both industry and FDA have made some "false starts and errors in judgment that are typical of those which occur during the first years of a broad and comprehensive law affecting many facets of the tremendous food-producing industry of this country."

He also referred to some misunderstandings that have developed, such as those surrounding issuance of lists of substances "generally recognized as safe."

"There are many chemicals so generally recognized as safe that we have not placed them on our lists and do not expect to," he said. "The vast majority of feed ingredients fall into this category. Because of this fact, some misunderstandings have arisen and some people have concluded that unless a material appears on a list of substances generally recognized as safe it is automatically banned from use." This conclusion, he emphasized, is incorrect.

"We know that you are as concerned about the safety of our food supply as we are," Mr. Kneeland concluded. "Such differences as there may be between us and your industry are honest differences of opinion about highly complex and unresolved scientific matters. There is no difference in objective."

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MANAGEMENT

(Continued from page 1)

lated talks also were part of the AFMA program, geared this year to vital factors in management and decision-making in the decade ahead.

Summaries of talks follow:

CAPITAL AND MONEY MANAGEMENT—There will be an increasing premium on financial planning to insure that the financial structure of a business is suited to its needs and economic characteristics, said Mr. O'Brien.

The Purina vice president discussed money management from the standpoint of yardsticks for both customers and members of the feed industry.

Commenting on financial policy, he warned: "The past few years have furnished us a number of examples of feed manufacturers stretched too thin in an effort to do the whole job, to substitute their financial resources for inadequate customer resources. More than ever this will be suicidal in the '60's."

At the outset, Mr. O'Brien observed: "We hear a great deal about such things as integration; contract farming; joint ventures; concentration of farm enterprises into larger units; increasing cost rigidities, lower profit units per unit of product. In view of these things, we may well ask just what is the role of financial management in this decade."

Of basic importance is the fact that financial management cannot function in isolation from what is taking place in the market place. Financial managers, said Mr. O'Brien, will have to know not only what ag economists are forecasting, but, more important, what is taking place in the field.

Each feed manufacturer must decide where he fits into the pattern of the future, and financial management must be prepared to advise top management as to the soundest courses.

Mr. O'Brien first took a look at customers and their money management requirements:

Credit Analysis vs. Investment Analysis — Most credit analysis has been geared to the commercial bank concept of self-liquidating loans, it was noted. Frequently, this has taken the form of a report by the salesman and office review of financial statements, credit reports, etc.

However, the changing character of the feed business has put more emphasis on capital loans, long-term relationships, sharing-of-risk arrangements, production loans which become in fact a revolving credit, larger enterprises, multiple corporations. All of these things, said Mr. O'Brien, dictate that greater consideration be given to techniques of investment analysis, or "analysis in depth."

Analysis in Depth — In a situation involving a large extension of credit, analysis might proceed along these lines:

ADEQUACY OF RECORDS AND REPORTS—"Is the customer operating out of his hip pocket, or does he have adequate records and reports," Mr. O'Brien asked. Consolidated profit and loss and balance sheet statements are particularly important in the case of multiple corporations.

SOURCE AND DISPOSITION OF FUNDS—For the past three to five years, what has been the source and disposition of funds? Is the business growing soundly, with ample working capital? On the basis of past experience, what funds might be available for principal and interest payments?

CASH AND PROFIT PROJECTION—Many segments of the industry have expanded rapidly, Mr. O'Brien pointed out, but few appreciate the value of financial planning. Detailed profit analysis, projection of cash flow and of profit are vital to sound analysis. Substantial net worth is fine, but profits are the lifeblood of a business.

MANAGEMENT — An analysis of the organization of the customer, with special emphasis on management effectiveness, is frequently overlooked in credit analysis. The growth in organiaztion and depth has frequently not paralleled the growth in assets. Efficient management will be even more important in the future. One problem is that even efficient operating management may be offset by poor financial management. The big operator of today developed primarily as a specialist or technician in some phase of the business; unless he develops or has available sound business management counsel, he may get into hot water as a result of overexpansion, insufficient working capital, etc.

LEGAL CONSIDERATIONS — Many large operators have established multiple corporations, partnerships and proprietorships. This necessitates effective legal analysis of corporate minutes, adequacy of insurance coverage, corporate powers, property available for security, effectiveness of personal guarantees.

CHARACTER — "Irrespective of net worth, management ability, etc., unless fundamental character is present, we are asking for trouble in any large scale credit extension," Mr. O'Brien said.

Turning the Spotlight on Ourselves —Yardsticks and standards must be applied to feed manufacturers as well as their customers, Mr. O'Brien pointed out.

PROFIT PLANNING — Financial management in the years ahead, he continued, will have to do profit planning. The best tool of financial management is the relationship of returns to investment.

"There are present in the industry practices with regard to absorption of interest charges, what might be called loss-leader selling, credit for all purposes, etc., which may well give us pause as we consider our return on investment during the next 10 years," Mr. O'Brien said.

"Analysis of our profits in the various divisions by use of the concept of return on investment should be an essential technique. This relates net profit to the investment required to produce it. It is the best common denominator to measure management's use of existing capital and to plan for commitment of future capital."

FINANCIAL POLICY—There almost certainly will be capital shortages in the next decade. At the same time, capital accumulation is increasingly concentrated in the hands of professional trustees. This will place an increasing premium on financial planning. In looking for funds, financial managers may well need to develop a financial product which is saleable to a greater extent than in the past. To ease their own capital shortage problem, feed men must be concerned about the availability of short and long term financing for customers through banks and other lending institutions.

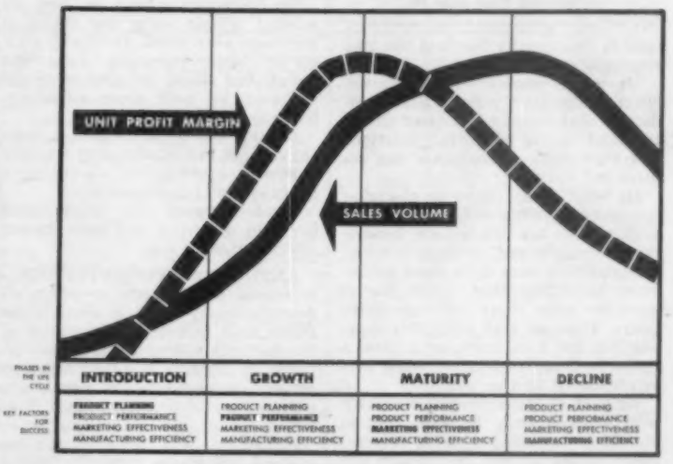
"The above reminds us that customer equity and borrowing capacity will be vitally needed," said Mr. O'Brien. "Some firms have feed-out departments. How far can this go? Can companies afford to do without the customer and his borrowing capacity? Too much substituting of financial resources for inadequate customer resources can be suicidal."

CUTTING COSTS AND IMPROVING EFFICIENCY — Many of the products of the feed companies are in the maturity phase of the product life cycle and, in this stage, marketing effectiveness becomes the key factor for success, with manufacturing efficiency close behind.

This was pointed out by John F. Gustafson of McKinsey & Co., Chicago management consulting firm, and formerly with McMillen Feed Mills.

In his presentation, Mr. Gustafson traced the development of a hypothetical firm (not entirely so hypothetical, it is understood), called Blueberry Mills, and its products. Mr. Gustafson pointed out how different aspects of operations become more important as products go through the life cycle. (See the accompanying chart.)

PROFIT AND VOLUME RELATIONSHIPS DURING THE PRODUCT LIFE-CYCLE



Summing up the situation in which the feed man, Jim Blueberry finds himself today, Mr. Gustafson said: "Most of Blueberry's products are in the maturity phase of the cycle. Manufacturing efficiency is extremely important. Cost reduction programs are constantly in effect. Jim has the problem of bringing out new products often enough to maintain unit profits and to offset the effects of the products entering decline. With most of his products in maturity, Jim has to face the characteristics of this phase of the cycle:

"Marketing effectiveness is the key factor for success, with the manufacturer having to control his distribution by whatever devices are required —pricing strategy, financing, advertising, service, re-selling and the like. The manufacturing orientation is right down to the market place."

Mr. Gustafson went on to quote an economist's recent article on farm changes as pointing out some of the maturity characteristics. This included a discussion of integration, the development of semi-captive markets, the fact that parts of the farm markets "free" to any potential supplier may be sharply curtailed, prospects for less selling to individual farmers and supplying of management and service help.

To meet some of the problems, the speaker said, "Jim" has put purchasing responsibility under the general manager of the feed division. He has put operations research to work on such problems as formulation, inventory control and production scheduling. He is aware of the extreme importance of salesmen's development programs and has put the concept of "gaming" to work here. Further, in recognition of savings possible through efficiently handling movement and storage of materials, Jim is considering appointment of a manager of distribution, who would be charged with over-all responsibility. He also is in the trucking business to improve service and cut costs.

PILLSBURY

(Continued from page 1)

and production in the area served by the plant.

Announced at the same time were plans to move feed division headquarters from Clinton, Iowa, to company headquarters in Minneapolis, effective June 1.

Also, there have been certain changes in staff functions and assignments which are part of the over-all program.

All of the moves announced this week are the final step in a decentralization program which was undertaken previously and which is aimed at putting responsibility, authority and decision-making as close as possible to points of action.

Appointment of a single manager at each of the plants replaced a dual manager system which has been in effect the past two years. Formerly there were a plant sales manager, in charge of sales, and a plant manager in charge of production, at each plant.

Commenting on the change, Mr. McNeal said that placing total responsibility with one manager at each plant was done so that all local intelligence can be utilized to make faster decisions at the local level.

The move to Minneapolis, he said, will better integrate all staff functions into a single operating unit at company headquarters. The feed division has been the only Pillsbury division not headquartered in Minneapolis.

Key personnel who have been at Clinton will now be located in Minneapolis.

Jack Hubbard will be sales and marketing manager; James Finlayson, division controller; Clarence Bell, operations manager for the Southeast; Lonnie Wright, operations manager for central and western areas; Robert Alexander, procurement manager; Frank Steinmetz, personnel and training manager; Everett Blasing, nutrition and research manager, and Phil Murray, production and engineering manager.

Reporting to the southeastern operations manager will be these managers: Ted Judge, southern finance manager; Coy Skaggs, manager at Gainesville, Ga.; John Wulf, Nashville; Richard Siebrasse, Jasper, Ala.; W. E. Lavinghousez, Tampa, Fla., and Sam Vaughn, Orlando, Fla.

Reporting to the central and west operations manager will be Maurice Stanton, northern finance manager; Charles Dobbs, manager at Centerville, Iowa; James McAllister, Lima, Ohio; E. C. Rulifson, Clinton, Iowa; Ralph Stump, Ogden, Utah, and Leo Bilger, West Coast.

Minnesota Seminar To Discuss Research

ST. PAUL — Swine nutrition, beef nutrition and veterinary medicine will be the subjects at the May 17 meeting of the Twin City Nutrition Seminar members at Peters Hall on the St. Paul campus of the University of Minnesota.

Ed VanHoven, VanHoven Co., Inc., will be chairman of the group discussing current research at the University of Minnesota. Speakers will be Dr. R. J. Meade, on swine nutrition; Dr. O. E. Kolari and Dr. J. C. Meiske, on beef nutrition, and Dr. C. M. Stowe, on veterinary medicine.

Officers for the coming year also will be elected.

RESEARCH

(Continued from page 6)

protein can greatly increase the zinc requirement.

"It would appear," he continued, "that information now available indicates that vitamin E acts an an antioxidant in its biological functions and that other antioxidants can replace it."

He went on to report on changing responses to antibiotics, saying that responses to low levels have become more variable and perhaps smaller. He presented data with some antibiotics indicating that after one is used for some time, response disappears. Then, he said, after this same one has not been used for a time, a response is again obtained when it is reintroduced to the feed.

As part of his comments on amino acid requirements, he said caution should be exercised in using requirement values arrived at through use of free amino acid diets in formulation of practical feeds. It is necessary to have much additional data on availability of amino acids.

Dr. McGinnis said that from studies with turkeys, it appears that requirements for calcium and phosphorus are greatly reduced during the period from 8 to 20 weeks. Washington studies indicate that as little as 0.6% calcium and 0.6% phosphorus will meet requirements in this period.

Regarding enzymes and water treatment of grains, he noted that the area of production of the cereal grain seems to significantly influence its response to enzyme supplements. Barleys grown in the more arid regions of the West are more uniformly improved. He also observed that enzyme supplements are of less value for poultry as the birds increase in age.

Water treatment, Dr. McGinnis said, appears to produce what might be called an enzyme effect and a second effect due to antibiotic activity.

ANTIBIOTICS—Research with the antibiotic oleandomycin has shown that it produces definite improvements in performance of both beef cattle and dairy calves, said W. M. Reynolds, manager of Pfizer's research center. Previously beneficial effects had been reported with poultry, swine and lambs.

In a study with steers, the antibiotic improved weight gains by 13.8% and feed efficiency by 11%.

While other forms of treatment have characteristically been used in control of fowl cholera, Terramycin has been shown to effectively control this disease, Mr. Reynolds said. One advantage cited is that it does not have a toxic effect when treatment is prolonged. In addition to work on the efficacy of injectable Terramycin, Pfizer workers have studied oral administration through reduction of calcium while the antibiotic is given in the drinking water. Good results were reported.

ANTIBIOTICS IN MILK PRODUCTION—Field trials with 2,370 lactating cows in six states showed that feeding of the antibiotic Terramycin increased milk production so that profits were boosted by an average of nearly $7 per cow, according to Dr. N. D. Magruder of the Pfizer research staff.

Cows were paired as to dates of freshening and average daily milk production so that one member of each pair was a control and the other was fed Terramycin. In most cases, the cows were fed the antibiotic at a level of 75 mg. daily, with cow's daily grain allowance being top-dressed with an antibiotic premix. In larger herds, the premix and grain were mixed, and the cows, fed according to production, received from 75 to 110 mg. of Terramycin daily. Average duration of the trials was 186 days.

Dr. Magruder said that Terramycin-fed cows averaged 0.87 lb. more milk per head daily, a statistically significant difference. This added production is equivalent to $6.83 extra return per cow per 186-day period above the cost of the antibiotic.

Dr. Magruder pointed out that no adverse effects upon the digestive processes were noted. In testing milk for antibiotic carryover, none was found. And cheese cultures were not inhibited by milk from antibiotic-fed cows.

In all of the herds under test, footrot was not in evidence. And mastitis, dairymen observed, was less prevalent in six of the 17 tested herds.

Holsteins were the predominant breed in the trials, but other breeds also were under test.

ANTIBIOTIC POTENTIATION—A review of research on antibiotic potentiation by Dr. K. E. Price of the Pfizer staff included a description of five methods to improve antibiotic activity in fighting disease. Although none of the procedures is without disadvantages, a number have been found practicable under commercial conditions. It was indicated that one method, temporary reduction of calcium level in the diet, is being used by 60 to 75% of the big broiler operations.

It appears that reducing dietary calcium affects efficacy of the antibiotic in the G-I tract in addition to increasing the blood level. Dr. Price said that the benefit of a given level of antibiotic is increased 2 to 2¼ times through potentiation.

The techniques, as discussed by the researchers, include:

Temporary reduction in dietary calcium—With this method, a smaller amount of calcium is present in the intestines to inhibit absorption of the antibiotic. Misuse of the principal presents some danger of calcium deficiency.

Calcium-complexing agents—The second method involves tying up the calcium in the diet by adding an agent, such as citric acid, which has a stronger attraction for calcium than does the antibiotic.

Terephthalic acid—Addition of TPA to the diet gives higher antibiotic blood levels. Action of the additive is still not completely known, but it may alter the rate at which the antibiotic is excreted in the urine. This method does not yet have FDA clearance.

Calcium sulfate—This method involves substitution in the ration of calcium sulfate for calcium carbonate and/or dicalcium phosphate. The method is being used on a limited scale in commercial operations. The exact action is not known, but some evidence suggests that calcium sulfate is less readily available to the bird. Its use many increase litter moisture.

Soft phosphate — This method involves substitution of colloidal, or soft, phosphate for dicalcium phosphate. The mechanism by which this enhances blood serum levels of Terramycin has not yet been pinpointed, but calcium availability may be involved.

"It may be," said Dr. Price, "that the potentiating effect produced by soft phosphate substitution and possible calcium sulfate supplementation is essentially paralleling the effect obtained by reduction of dietary calcium. Should future research verify this, it seems probable that antibiotic potentiation could best be effected by temporary reduction of calcium."

LYSINE IN POULTRY AND LIVESTOCK RATIONS — Experimental studies with lysine offer a new concept in the nutrition of ruminants. This was indicated in a report by Dr. W. C. Sherman, head of nutrition research at the Pfizer research center, who reviewed several experiments on the evaluation of the amino acid lysine in rations for chicks, turkeys, swine, lambs and cattle.

If presently reported studies with ruminants continue to be verified by future research, there can be a breakthrough into a new area of ruminant nutrition. Previously it has been assumed that dietary protein quality was relatively unimportant in ruminant rations.

Performance of lambs and cattle on fattening rations of variable protein content and quality was improved by lysine addition. The studies included Pfizer and other work in which growth and feed efficiency in cattle and lambs were improved by lysine supplementation. In one test, lysine responses appeared greatest on a high-protein ration and were better with 10 gm. than with 4 gm. At the same time, it was noted that performance on low-protein rations with added lysine equalled that on unsupplemented high-protein rations. Purdue work with lysine supplementation of high protein-urea also was cited.

On special lysine-low rations, fast-growing broiler chicks required 1.02% lysine in starting rations with 18.5% protein and 923 Calories of productive energy per pound for maximum growth. Increasing protein or energy levels increased lysine requirement so that at least 1.2% lysine was required in a ration of 23% protein and 989 Calorie content. For best feed efficiency higher levels of lysine were required than for maximum growth.

Practical turkey rations containing a fairly wide range of protein and energy were improved by lysine supplementation during the starting, growing and finishing periods.

Swine growing and finishing rations containing respectively 14 and 12% protein from corn and soybean meal were not improved by lysine supplementation. A reduction in protein level or replacement of corn by milo or soybean meal by peanut meal depressed growth and feed efficiency, and these were restored to normal by lysine supplementation. Carcass quality also appeared to be improved.

SWINE NUTRITION — An extensive review of swine nutrition developments by Dr. D. E. Becker of the University of Illinois indicated that rations lower in protein but better balanced in amino acids may emerge from studies of use of supplementary amino acids.

The report included findings indicating that lysine becomes a limiting amino acid as protein level is reduced in corn-soy rations. Tryptophan also may become deficient as protein is lowered.

As part of a discussion of energy, Dr. Becker presented data on metabolizable energy values in various feedstuffs for swine. Certain differences from values for chicks were noted, and he said nutritionists should be thinking about using values determined for the pig rather than for the chick.

Other comments on energy included the suggestion that gilts should be full-fed for high ovulation rate and limited-fed to attain higher embryonic survival.

Among recent findings on mineral requirements is that both iron and copper, in addition to zinc, are related to prevention of parakeratosis.

He went on to say that the influence of nutrition on antibody production represents a challenging field of research.

Evidence so far, he said, fails to demonstrate an adequate advantage to justify use of thyroprotein for lactating sows.

RUMINANT NUTRITION—Dr. C. F. Huffman of the Michigan State University dairy department presented an extensive review of recent developments in ruminant nutrition.

As part of his discussion of energy, he noted that, although a considerable amount of work has been done, there is a need for a large amount of research to help account for all the productive energy used by ruminating animals.

Nitrate problems were mentioned, too. When the amount of nitrate in the rumen is small, the rumen bacteria can convert it to protein without toxic effects, but if a large amount of nitrate enters the rumen, this conversion cannot take place rapidly enough. Plants that accumulate nitrate, ranked in order of decreasing potential, are: corn, Sudan, small grains, rape and fescue as potentially high producers; alfalfa, Ladino clover and milo as moderate accumulators; red clover and brome grass, consistently low.

Discussing minerals and their interrelationships, Dr. Huffman said it appears that in several instances, if the levels of various elements are disturbed beyond a certain tolerance, productivity and health are disturbed.

Dr. Huffman devoted attention to appetite and noted that more information on factors affecting appetite is highly desirable. It is possible that in the future, we will get animals with high milk production and with high appetite at the same time.

PROGRESS IN VETERINARY MEDICAL RESEARCH—Application of rearing germ-free animals to basic research and applied problems in livestock and poultry production may be the greatest single animal health development during the 1960's, said Dr. C. K. Whitehair of Michigan State University.

One applied aspect of germ-free work is the rearing of "disease-free" pigs. Swine producers have reported an increase of 20-25% in net profits as a result of this technique.

Speaking of the heavy toll of animal diseases, Dr. Whitehair emphasized the need for a reduction in livestock diseases as the most significant factor in improving income. There is increased emphasis on a sound animal health approach, but there is still a good deal of apathy among producers.

Dr. Whitehair cited various interactions of infection and nutrition, noting for example that deficiency of vitamin A has been found to favor infestation of chickens with roundworms.

Speaking of feeder cattle, he pointed to evidence indicating that requirements for vitamin A may be greater than previously reported. It is suspected that under feedlot conditions, factors such as increased nitrates in certain roughages may increase vitamin A requirements.

The use of potentiated tetracycline antibiotics to control certain diseases was pointed out.

AVIAN DISEASE RESEARCH—A discussion of work on poultry diseases by Dr. Roy Luginbuhl included information on the use of potentiated tetracycline antibiotics to control infectious synovitis and PPLO. He noted that terephthalic acid and low-calcium diets have been shown to potentiate the antibiotics. This has provided from two to four times the blood serum levels previously reported with antibiotics.

"If Newcastle disease is to be eradicated," he said, "the approach must be through use of a good inactivated virus vaccine. If industrymen prefer to use the labor-saving, live virus mass vaccination method and live with the disease, then the inactivated virus product will find little use."

Dr. Luginbuhl said that the recently introduced cloacal-drop vaccination for infectious laryngotracheitis may replace the standard cloacal brush vaccination method.

POLICY GOALS

(Continued from page 7)

operating individuals and groups, is of greatest mutual advantage.

"6. To cooperate in every way possible with state and federal departments of agriculture, agricultural colleges and experiment stations, agricultural teachers and leaders, agricultural, food, and feed organizations, veterinarians, and other groups concerned with animal agriculture in their programs of research, education and leadership.

"7. To assist and coordinate activities of the feed industry in its application of the scientific findings in feeding, breeding, and management techniques which serve producers of animal products most efficiently."

MARKETS

(Continued from page 2)

tein feeds averaged easier as a reflection of a 5¢ a protein unit decline for fish meal.

The price trend was mixed for whole feeding grains, with milo averaging 50¢ a ton lower on larger offerings, while listings were steady for barley, corn and oats.

New crop alfalfa hay of No. 2 green grade was sold in the Pasco, Wash. area during the week at $32 a ton, baled, delivered Portland. Buying interest for old-stock hay remained very quiet, with sales limited to a few small, fill-in lots.

South Central

No improvement was noted in formula feed demand this week. Business continues to coast along on the same scant five day production level that has prevailed since early in April. Mill officials hope for better sales during the last half of this month, but admit that there is no present indication of any change, either up or down.

Business is on a hand-to-mouth basis. Dealers are buying carefully, for replacement needs only. Credit often is the controlling factor, but besides this there is no incentive to stock up unnecessarily. Formula feed prices are on the easy side, ingredients are plentiful and pushing for an outlet with no quick turn around anticipated.

Despite heavy hog marketings and smaller spring farrowings, pig feeds and hog supplements continue to provide a big share of mill output. Layer feeds move in fair volume but chick starter sales are running below expectations.

Ohio Valley

Unseasonable weather and a continuing lack of sufficient rainfall have either slowed down considerably or temporarily suspended plowing and planting activities on many valley farms, and this is being reflected in even lower demands for formula feed than had been experienced earlier this month.

As a result, most area feed mills were operating on restricted schedules of five days or less, with most of them employing only skeleton work crews.

Temperatures this week ranged downward to the mid-30's, with light frosts and snow flurries being reported in many Ohio Valley areas.

STORAGE

(Continued from page 6)

amendment of this type to show that the congressional intent is, namely, government-owned facilities shall be used to the maximum extent possible."

The bill now goes to the Senate, where it is expected that the mature understanding of storage problems as found in such senators from the grain states as Milton Young (R., N.D.), Karl Mundt (R., S.D.) and Andrew F. Schoeppel (R., Kansas), among other Republican senators from the Grain Belt will persuade the upper chamber to discard this House provision when it comes up for debate on the Senate floor.

Thus far, the grain storage industry has taken a beating in many instances on grain storage rates and handling charges under the provisions of the new UGSA, and it is hoped now, in trade circles, that it will not be asked to face a legal provision which might be construed as ordering USDA to give priority to government-owned bins over the facilities of the proprietary trade.

Prompt and strong appeals to senators from their home constituents are seen as urgently necessary to head off this ill-advised provision, trade sources say.

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SEN. MUNDT

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portant weapon in the free world arsenal."

Sen. Mundt suggested that government money currently going into price supports and surplus storage could better be used in developing new products and new markets. "I dare say that if during the past 10 years we had spent 20% as much in this type of research as we have spent in storing and supporting the products we traditionally raise, we would long ago have found a permanent solution to the nation's farm problem."

The Senator, a member of the Senate Agriculture Committee, said we should be emphasizing crops for which there is a market instead of "merely growing what comes easy." He cited soybeans as an example of the kind of product which has a vast international market potential.

"What is needed," he said, "is more imagination and initiative in Washington to develop procedures for encouraging the expansion of the soybean market overseas, with the realization that acres added to our soybean production here will mean acres taken away from production of crops now in surplus."

Sen. Mundt also urged a "crash program" for the development of industrial uses of agricultural products. Such legislation was introduced some time ago.

An indication of the kind of farm program we may have if Vice President Nixon becomes President was given by Sen. Mundt when he declared that Mr. Nixon is an advocate of expanded markets and not limited production.

"He (the Vice President) is thinking in terms of expanding markets both at home and abroad and in the whole exciting and virtually untapped area of creating industrial markets for a large volume of farm products. He is thinking in terms of using incentive payments to pull acres out of the production of surplus crops and into the production of crops not currently in surplus or for which foreign, domestic and industrial markets can be developed or created."

The Vice President, according to Sen. Mundt, "envisions an agriculture of abundance and prosperity—not an agriculture of crippling controls.

SCHOOL

(Continued from page 7)

School, Inc., 20 W. 9th St. Bldg., Kansas City 5, Mo.

Presiding at the meeting here was Larry Alley, Pay Way Feed Mills, Kansas City, chairman of the board of trustees. Explaining program, research and other plans were Max Cooley, Hoffman-Taff, Inc., Springfield, Mo., program chairman; Lloyd Larson, president of Feed Production School, Inc., and Eric Carlson, Ralston Purina Co., St. Louis, research committee chairman.

Mrs. J. E. Beasley, Jr., Pres.

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December 11, 1959

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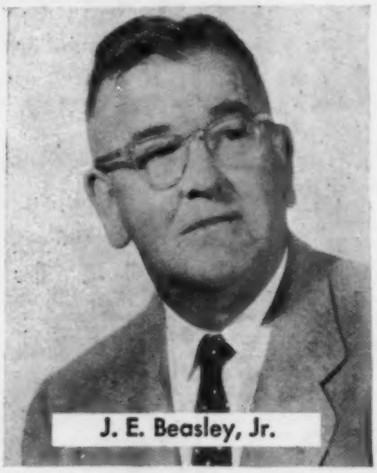

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